FUNDAMENTAL CONCEPTS IN CLINICAL PSYCHOLOGY

G. WILSON SHAFFER

Professor of Psychology, Director of the Psychological Clinic
Dean of the University, The Johns Hopkins University
Chief Psychologist, Sheppard and Enoch Pratt
Hospital, Towson, Maryland

RICHARD S. LAZARUS

Associate Professor, Department of Psychology,
University of California

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PREFACE

The field of clinical psychology is an extremely complex one, and moving about in it with ease and assurance requires a breadth of understanding that is not easily attained. It is therefore not surprising to find that a clear pathway of progressive study has not been provided for the student of clinical psychology. In some instances the student begins a formal course in the clinical field with no more background than that provided by a single course in general psychology, while in other instances no formal course is provided until the student is well along in a graduate program.

The books available to the student are either specialized manuals for the clinician or books devoted to measurement or evaluation.

The present book, recognizing these facts, represents an effort to present a systematic and integrated group of topics that are fundamental to satisfactory movement in the clinical field. The emphasis of the book is placed on theory and methodology and is therefore directed both to the beginning student in clinical psychology and to the person who has developed some competence with clinical techniques. For the beginning student the book should serve as an introduction to later training and practice. We have assumed that such a student will have some knowledge of general and abnormal psychology. In an ideal situation, of course, he would have broad basic preparation. For the advanced student the book will tie together the personality and clinical field in such a way as to give his procedures more meaning.

This text is not designed to serve as a clinical manual. Competence in clinical practice demands much more than a book. It depends upon direct experience, broad reading, a deep understanding of human nature, constant attention to the latest research. Nor is the book set up for a full description of the special procedures and techniques. These have been provided in many other sources, a bibliography of which has been included. The emphasis has, instead, been placed on basic principles, methodology, and general techniques. This emphasis should provide the foundation necessary for growth in proficiency and for more complete understanding of the administration and interpretation of the technical instruments of diagnosis and the methods of conducting a therapeutic interview. The book encourages the student to become something more than a technician who administers and interprets tests and helps him to develop a greater responsibility for making

progress in the development of knowledge and procedures. The reader is urged persistently to develop the critical faculty which is so badly needed in the clinical field because of the tentative and often confused nature of so many of its concepts. We have tried to write a critical and hard-headed account of the clinical area, and at the same time put across an appreciation for the sounder principles and for the methodological problems we face as clinical psychologists.

It is probable that many people will find the book useful not only as a text but also as a reference. In most cases the chapters stand on their own. They may be taken out of context without loss of value. For example, a reader interested in projective techniques, in personality theory, or in psychoanalytic therapy might read any one of these chapters to gain a better picture of the field. The bibliographies were designed to be useful for reference purposes without becoming entirely unwieldy. They are not necessarily complete, since each of these fields contains such abundant references that complete coverage would be impractical. However, the references cover the most important secondary sources and many selected primary sources as well. The material of the book has been organized so as to present history, methodology, general concepts, evaluation, and therapy.

Because the status of present knowledge is best seen in its relationship to its historical development, some attention has been given to the history of the understanding and treatment of mental diseases. The student should understand that a number of disciplines and influences have been operative in the development of knowledge about human behavior. The history of philosophy, psychology, medicine, sociology, anthropology, etc., together, provides us with the background that is needed to understand the development of current approaches to diagnosis, prognosis, and treatment of behavior disorders. A knowledge of the development of the modern clinic and its clinical tools is desirable in establishing an intelligent perspective toward modern clinical problems. Therefore, the first chapter has been devoted to a brief survey of some of the main historical developments and a discussion of the current professional problems of the clinical psychologist.

The second chapter deals with methodology because the worker in this field who does not have a clear understanding of the strengths and weaknesses of the various clinical concepts and techniques is likely to be guilty of serious error and misunderstanding. Reliable knowledge depends upon the correct application of the principles of science, but the extraordinary complexity of human behavior makes the application of scientific reasoning to clinical problems extremely difficult.

The remainder of the manuscript has been given over to the critical review of the various problems, concepts, and techniques of the clinician who is faced with the task of understanding and treating behavior deviations. Thus, attention has been given to the study of intellectual capacity and intel-

lectual defects, to theories of the nature of personality and the problem of its measurement. Considerable space has also been devoted to the area of psychotherapy and to the description of the major theories and techniques of treatment of the behavior disorders. Finally, the broad areas and loci of activity of the clinical psychologist have been examined. In this section the clinician in action has been described and illustrated with case material.

Although the task of the actual writing has been divided, with Lazarus writing the first eight chapters and Shaffer the last seven, the book has been truly a joint effort; the authors have labored together through all the material and take joint responsibility for the attitude and opinions expressed.

It is the opinion of the authors that the fundamental concepts necessary for the clinical psychologist have not been assembled in one manuscript. It is their hope that this book will serve some of the needs of those clinical psychologists and prospective clinicians who recognize the enormous limitations of our present theoretical and applied knowledge and who believe that the advancement of the field depends upon both rigorous thinking and the persistent struggle for reliable information.

The authors wish to express their gratitude to the many authors and publishers who have granted permission to reproduce material from their publications. They are also deeply indebted to Miss Virginia Shaffer for editing a part of the manuscript, to Miss Helen Kuhn for her clerical assistance, to Dr. Joseph Zubin for his helpful criticisms and suggestions, and to their wives, Margaret Shaffer and Bernice Lazarus, for their assistance and understanding during the preparation of the mansucript.

G. Wilson Shaffer
Richard S. Lazarus

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CHAPTER 1

HISTORICAL DEVELOPMENT

Psychology, as an organized field, is not much more than 70 years old. Its growth during the past few decades has been phenomenal. As with most disciplines, increased specialization has accompanied the development of psychological knowledge. Today there are 17 divisions of the American Psychological Association, each representing different interests and skills among psychologists. However, no branch of psychology has enjoyed a more widespread and rapid development than the clinical specialty in the last 20 years. There is no doubt that, in terms of numbers of participants, the clinical field is the most popular in psychology today. Its growth certainly has not yet reached a peak.

As the reader will discover, there is relatively little agreement within the field of psychology concerning what the subject matter of clinical psychology really should be like. The expansion that has overtaken it has been so rapid that there has been little time for clinical curriculums to become well established. What has particularly complicated the situation is the fact that a large number of clinical psychologists are professionally oriented, that is, are concerned with applying their knowledge to the solution of human problems. A smaller number of clinically oriented psychologists are chiefly concerned with the future of the clinical discipline as a field of science. These two groups are not always in agreement about what the clinical psychologist should be like, what he ought to know, and what he should spend his time doing.

In order to understand the professional problems and subject matter of clinical psychology, it is important that the student have a perspective about the historical development of the field. We have therefore organized our introductory chapter in the following way. We shall begin our discussion with the development of the various influences which have had an impact upon the clinical field. We shall continue with a description of the more recent activities in modern clinical psychology along the lines of the development of the tools of measurement and the establishment of clinical psychology as a profession. Later we shall take up briefly the current status of the field and some of its professional problems.

HISTORICAL SURVEY

The development of clinical psychology was the result of many diversified influences, some outside the area of psychology itself. Events in the biological sciences and philosophy, social pressures and political movements, and many other forces helped shape the clinical specialty and make the discussion of its history a complex one. We can only sketch some of the main lines of development.

For all practical purposes, clinical psychology as a self-conscious field is a very recent development—of less than 50 years. Its history merges with that of abnormal psychology which takes us as far back as primitive times. Zilboorg (1941) [1] has presented an interesting account of the most important developments of abnormal psychology up to modern times.

We must realize, however, that systematic attempts to develop techniques for studying the maladjusted individual could not have emerged until mental disease was no longer associated with mysticism as it was up to the eighteenth century. Moreover, the development of adequate concepts of personality had to await, to a large extent, progress in the biological sciences. Advances in the logic of the scientific methods were necessary before clinical observation could be intelligently evaluated. It was also essential to have tools for observation and measurement before any real progress in clinical problems could be made. We shall begin our historical survey by summarizing the progress in the field of abnormal psychology which bears so close a relationship to the clinical area.

ABNORMAL PSYCHOLOGY

Primitive and ancient people viewed mental aberrations with a magical and religious frame of reference. Methods of dealing with these unfortunate persons who were believed to be "possessed" of evil spirits ranged from cutting a hole in the skull to let the demons escape, as in primitive times, to chaining, starving, beating, burning, and magical exorcism which were performed by the high priests of the ancient cultures.

The sixth and seventh centuries B.C. found Greek philosophers such as Thales, Anaximenes, Anaximander, Heraclitus, Anaxagoras, and Democritus speculating on the nature of man and the universe. Shortly afterward, Hippocrates (460–370 B.C.) introduced notions which originated Greek medicine and were surprisingly modern in character. He suggested the brain as the seat of mental activity, pathology of which was the cause of mental disease. He renounced ancient superstition and magic and the spiritual concepts of disease. Baths, diets, bleeding, and music were recommended as treatments. He keenly observed and described some clinical types in a manner which

[1] Full references are given in the Bibliography at the end of this book.

would stand as excellent even today. Hippocrates was able to shift readily from anatomical views of illness to the notion that chemical and even emotional states were causally related to mental disease.

Some further scientific developments were made by Asclepiades at the end of the pre-Christian era, when Rome had become the center of scholastic productivity. Aretius and Soranus were two other major physicians of the Greek-Roman period. These men paid considerable attention to the symptoms of mental disease. The great progress about mental disease which originated with Hippocrates was passed on later to Galen (130–201 A.D.) and was mostly buried with Galen's death and the fall of the Roman Empire. The enlightened ideas of Hippocrates, Asclepiades, and Galen were then submerged for centuries. Superstition, demonology, sorcery, and magic returned in full force during the Middle Ages, and not even among the scholars could one find any of the medical psychology of the Greeks undistorted by notions of magic.

Following the Renaissance, outcroppings of intelligent interest in psychology and mental disease appeared sporadically in Europe amid the general continuance of superstitution and the inhumanity toward the mentally ill. In the sixteenth century ideas concerning sensation, emotion, and association began to appear. At that time a man named Vives, a century before Hobbes and three centuries before Freud, was discussing the importance of psychological associations and the effects of the emotions upon them. The writings of Vives suggest anticipations of some of the modern Freudian ideas. In this same period, Paracelsus and Weyer were struggling bitterly against demonology and attempting to divorce medical psychology from theology.

During the seventeenth century progress was beginning to be made in neuroanatomy, neurophysiology, and neuropathology. Psychology, however, began to be taken up by philosophers like Bacon, Descartes, Hobbes, Hartley, Locke, Malebranche, and Spinoza, who speculated about the emotions and the will. Psychology and medicine began to move in separate ways. Some slight progress in the treatment of mental diseases began to appear. During this period a Dutch physician named Weyer was urging more humane treatment for mental patients.

Around 1765, King George III of England suffered a mental disorder which was given the customary brutal treatment of the times by some of England's foremost physicians. This led to a parliamentary investigation and some reform in England. By 1796 the York Retreat, a hospital near York, England, was erected following pressure by William Tuke, of the Society of Friends. This hospital instituted humane treatment for its patients. In France, near the end of the eighteenth century, Philippe Pinel, a French physician, became director of the Bicêtre Asylum, the largest mental hospital in France. His humanitarian reforms were important steps in the progress

of psychiatry. This development at Bicêtre is well known to most psychology students. In 1795, Fricke, a physician, introduced similar changes in Germany. Comparable developments in the United States occurred around this same period with the opening of the Williamsburg Asylum in Virginia in 1773. Much of the American progress in psychiatry was fathered by Benjamin Rush (1745–1813). By the early 1800's much progress had been made in introducing humane methods and attitudes toward the mentally ill. Many students will be acutely aware that this struggle for humanization in the treatment of mental illness has not ended even to this day.

It is interesting to note that one of the influences which led to the later development of psychoanalysis, modern personality theory, and current treatment methods occurred in the nineteenth century in the form of what came to be called "mesmerism." Mesmer had discovered the phenomenon which we now call "hypnotism." He called this power (which he believed only he and occasional other persons possessed) "animal magnetism." Mesmer made use of his skill at hypnosis in much the manner of the modern circus performer. The medical world was exceedingly skeptical of the phenomenon and of Mesmer, who was often in difficulties with the French authorities over his activities. For years it was impossible for scientific people to get a hearing on the mysterious hypnotic phenomenon until Braid, much later, gave it its name "hypnosis" and added scientific respectability to it.

The technique of hypnosis was later taken up by Liebault in 1860 as a means of treatment and experimentation on hysterical patients. Charcot and Bernheim continued studying the technique and theorizing about it. Freud was stimulated by them to take up hypnosis as a treatment technique. Originally working with Breuer, Freud later abandoned hypnosis for the technique he called "free association." With his emphasis on unconscious motivation, the work of Freud has stimulated and shaped clinical psychology more than any other single development. Freud's pupils, Jung, Adler, and others, expanded the original psychoanalytic doctrines and introduced modifications of them.

Along somewhat different lines, another student of the hypnotist Charcot was Pierre Janet, who is known in psychology for his dissociation theory of personality. The theory of dissociation, which sprang from the observations of hypnotic events and patients with multiple personalities, was later elaborated by an American named Morton Prince. One can see that Mesmer's early experience with hypnosis had expanded into a long and broad trail of clinical activity that is still of major importance in our present-day clinical theory.

We have traced some of the progress in the humanization of the treatment of mentally sick people through a good part of the nineteenth century. Most of the activity originated in Europe. However, the United States also kept pace with the slow European progress. An outstanding figure in this country

was Dorothea Dix, who for a large portion of her life campaigned successfully for a state mental hospital system. In 1909 mental hygiene activities in this country took a long step forward with the founding of the National Committee for Mental Hygiene. Among the major factors in this development were the efforts of Clifford W. Beers, who had published an autobiographical account of his own mental illness a year earlier. Progress in psychiatry in this country was also furthered by a physician by the name of Adolph Meyer.

The history of abnormal psychology records many other significant events which ought not to be neglected but which we cannot attempt to cover in our summary. The work of Pavlov on the conditioned reflex, the discovery of Metrazol by Meduna for the convulsive treatment of severe mental disorder, Sakel's work with insulin which is still being used in schizophrenia, and the introduction of electric shock by Cerletti and Bini must be included in any complete account. As we have noted earlier, the most adequate source for a history of this subject matter may be found in Zilboorg (1941).

We shall now concentrate our attention on other events in other fields which, simultaneously with the progress in the abnormal field, have had a great deal to do with modern clinical psychology. Such diversified happenings as the growth of interest in child study, genetics, and statistics are part of the story. The foundation of the first psychological laboratory must be included. Philosophers like Locke and biologists like Darwin occupy most important places in the history. In the sections which follow we shall try to sketch the main influences in modern times which predated clinical psychology but are nonetheless primary social and intellectual streams in the actual foundation of the first psychological clinic and in the professional and scientific expansion which followed.

CLINICAL BEGINNINGS

At about the time reforms in mental institutions were becoming more general and well established, other historically important people were engaged in activities which were also going to contribute to the rise of clinical psychology. In 1838 Esquirol made the distinction between the psychotic and the feeble-minded individual explicit for the first time. Prior to this, except in the case of mania, the notion of amentia and dementia had not appeared. Little attention had been given the feeble-minded, probably because they were not so socially dangerous as the psychotic. The distinction between the loss of capacities through mental disease and the failure of capacities to develop was important at that time primarily because of the question of the treatment of the mental defective.

Esquirol pointed out that there are various grades of mental defectives, although for practical purposes he suggested two types corresponding to a high and low. In seeking objective criteria for the differentiation of the

various grades of mental defectives, he suggested the use of speech as the best index. He viewed speech as the function which bore the closest relation to the intellectual abilities. He noted that in the highest level of defective, speech was easy, becoming progressively more difficult in the lower grades until, in the lowest level, even single syllables were absent. As others had implied previously, Esquirol argued in favor of the congenital nature of mental defects. His views and observations were by far the most advanced of his time.

The dominant opinion concerning the curability of mental deficiency up to and at the time of Esquirol was that any effort toward improving the state of the patient was a waste of time. Pertinent to this attitude was a series of events which had occurred at the end of the eighteenth century. A wild naked boy, about 12 years old, was discovered in the woods at Aveyron, not far from Paris. He made inarticulate animallike noises, moved on all fours, and fought with his teeth and nails. The psychiatrist Pinel called him an idiot and therefore incurable. A colleague and former student of Pinel's by the name of Itard thought that the boy acted mentally deficient because of having been isolated from civilization at an early age. Itard attempted to educate the boy during a period of 5 years but failed to bring him to a point where he could care for himself. Itard's bitter disappointment was told in his accounts of his experience published in 1801 and 1807.[1] Despite the apparent failure, others took note of the experiment with interest. The French Academy of Science pointed out that the child had really gained a great deal over his original state when found. He spoke a few words, although indistinctly, and could match some printed words with real objects. He could follow simple commands and, in general, had become somewhat more civilized.

The real importance of Itard's effort lies in the stimulation it gave to his pupil Edward Seguin, who had also studied with Esquirol. Despite the fatalistic point of view of Itard and Esquirol toward the curability of mental deficiency, Seguin was impressed by the positive indications of the progress of the Wild Boy of Aveyron. He firmly believed that the feeble-minded could be educated. He established the first school for the education of mentally defective children. The news of his work spread, and his influence widened. In 1848 Seguin came to the United States and helped to alter the attitudes of American authorities toward the feeble-minded. With the efforts to teach the mental defective came the establishment of new schools and the introduction of new funds.

It is important to note that during this period, up to the twentieth century, despite all this increased interest and progress in the area of mental deficiency and mental disease, no tools had yet been developed to objectively measure the capacities of normal and defective children. Differentiation was

[1] Translated by Humphrey, G., and Humphrey, Muriel, 1932.

at best a qualitative matter with no consistent standard of comparison. Phrenological measurements and tests of sensory-motor skills had been attempted in vain. The concept of mental age had not yet been developed. Nevertheless, it was this earlier exploration of Esquirol, Itard, and Seguin that ultimately helped stimulate Binet to introduce his concepts of the measurement of intelligence and provide the newly arising field of clinical psychology with some of the tools without which it could not readily have become effective. More will be said about the mental defective in a later chapter. Another kind of stimulus for the mushrooming interest in the mentally deficient individual was a somewhat more academic and philosophical, yet important, influence. The history of ideas concerning the intellect up to the time of Esquirol is of itself an interesting study which cannot be undertaken here. A great deal of insight into the philosophical history of intelligence can be gained from Peterson (1925).

As with the case of the mentally ill, the ancient idea of intelligence was tied up with supernatural power. Plato (427–347 B.C.) also identified mental activity with an immaterial power. Aristotle (384–322 B.C.) spoke of the "soul" of matter. The Romans translated the Greek idea of the intellect (termed *nous*) into the word *intellectus.* The concept of intelligence was limited to cognitive function, as distinguished from feeling and willing. This distinction has been popular up to the present. However, today a number of theorists have been criticizing this somewhat arbitrary division of psychological areas.

Thought concerning "the mind" can be traced through such philosophers as Descartes, Geulinex, Malebranche, Spinoza, Leibnitz, Hobbes, Locke, Berkeley, Hume, Hartley, and others and leads into modern associationism. The development of the ideas of these and other men is part of the history of psychology itself. Their relevance to early clinical thought may be illustrated by the hoary nature-nurture question.

Spinoza (1632–1677) first laid the foundation for the notion of the existence of innate ideas. It was Locke (1632–1704) who opposed this point of view by suggesting that the mind begins as a *tabula rasa,* a blank tablet, and gains knowledge through the senses. Locke's influence on thought was strong for at least two centuries, but his notion of the *tabula rasa* became distorted in some circles to mean that all minds are potentially alike. The philosophical arguments of this sort lent interest to the experiment of Itard and impetus to men like Seguin, whose efforts greatly affected the treatment of the feeble-minded. Darwin's later work on evolution and Galton's studies of hereditary genius must be seen in the light of this background of ideas.

The recognition that great individual differences exist between people is part of the modern tradition of psychological thought into which clinical psychology was born. Although the philosophers argued over whether these individual differences in behavior patterns and abilities were inborn or

developed as a result of experience, there was the ever-present realization that people were very much unlike each other in many ways. The development of a real interest in these individual differences did not, however, begin until after the early part of the nineteenth century. Scientists and philosophers even up to the present have tended to search for the rules which govern human behavior in general and often intentionally overlook the individual exceptions to these rules. A knowledge of general principles of behavior has not allowed us to predict accurately about the individual case. Much of the future progress that can be expected in our understanding of individual behavior will come from the recognition that these general principles must be supplemented and enlarged by a concern with the individual case.

The relationships of personality variation to the unique combinations of biological and social events which surround every individual's history must be fully explored. A sophisticated approach to the study of individual differences is crucial for personality research. Therefore, the history of individual differences plays a major role in the ideational foundations of clinical psychology.

Man has always appeared to have been aware of individual differences. In some instances the writings of the ancients give evidence of a remarkably modern orientation toward them. For example, Plato suggested that men should be assigned to tasks for which they were suited. In *The Republic* he recommended that tests of military aptitude be given to facilitate the proper selection of soldiers. Aristotle wrote about group differences, stressing variations in racial, sexual, and social characteristics.

During the Middle Ages, individual differences seem to have been forgotten in favor of philosophical generalizations and principles about human conduct. Interest seems to have revived somewhat in the time of Rousseau and Herbart during the eighteenth and nineteenth centuries. However, even as late as the end of the nineteenth century, Bain (1879) took only slight note of the problem of individual differences.

The first really systematic measures of individual differences occurred in astronomy following an interesting mishap. In 1796 Maskelyne, the Astronomer Royal at the Greenwich observatory, dismissed his assistant Kinnebrook because the latter observed the times of the stellar movements nearly one second later than Maskelyne himself. At that time the procedure of observation was the eye-and-ear method which involved rather complex perceptual judgments. Estimates were usually made of the exact time a star crossed a critical line in units of tenths of a second. In 1816 Bessel, the astronomer at Königsberg, read about the Kinnebrook incident and became interested. He discovered that large individual differences existed in the estimates of different observers. Bessel compiled data on these individual differences. The

individual reaction times which accounted for these differences were called by Bessel "the personal equation."

This general development in astronomy had considerable influence on the later studies of reaction time in experimental psychology. As we shall see shortly, Cattell, an American who studied with Wundt in the earliest formal psychological laboratory at Leipzig, did the first systematic investigation of individual differences in reaction time. Cattell pursued this as his dissertation problem despite the fact that Wundt disapproved of the venture. These beginnings led to the systematic study of individual differences in other functions, including the measurement of intelligence. In present-day psychology we have barely scratched the surface of this broad area of problems.

The interest in intelligence which we have already described also helped stimulate the rise of the important field called "child psychology." In 1787 Tiedmann[1] published a record of the behavior of his infant son. This first child study led to further such work by men like Darwin (1877), Preyer (1882),[2] Shinn (1900), Scupin (1907), and William Stern (1914).[3] As interest and sophistication in these matters grew, the records of child development became more complete. Some of the activity along these lines culminated in the establishment by G. Stanley Hall of the child study movement. Specialized journals were also founded, and child psychology blossomed into the more sophisticated kind of endeavor it is today.

There is a great deal of overlap and common interest between the fields of child, clinical, social, and personality psychology. The understanding of the adult personality is thought to depend upon knowledge of the develop mental process from the earliest period of life. There is no more direct way of approaching the problem of personality development than by the longi tudinal and cross-sectional study of children. Therefore, the success of a comprehensive and sophisticated child psychology program is of the greates interest to clinical and personality psychology. Many of the theoretical ques tions may some day be answered by the study of the development process in young people. Many psychologists believe that more can be done by way of answering psychology's most urgent questions through child research than through any other approach.

The point must also be made that the line between child psychology and clinical psychology becomes extremely ill-defined in some areas of interest We shall see that the modern clinic had its beginnings with the attempt to deal with problems of mental deficiency in children. Moreover, there are stil clinics whose primary responsibility is the handling of intellectual and emo

[1] Translation by Murchison, C., and Langer, Susan, 1927.

[2] Translated by Brown, H. W., 1888.

[3] Translated by Barwell, A., 1930.

tional problems in children of all ages. The early work of child study and the later child study movement form a close historical link between clinical and child psychology.

In addition to the developments we have already mentioned, interest and activity in the areas of evolution and heredity reached a climax in the middle of the nineteenth century. *The origin of species,* published in 1859 by Charles Darwin, was a major contribution to all the biological sciences. Psychology became partial heir to the great heritage that this way of looking at the development of all species provided. Darwin also had a more direct contribution to make to psychology in the form of his *Expression of the emotions in man and animals* (1873). In the same year Herbert Spencer's second edition of the *Principles of psychology* appeared.

Both Spencer and Darwin suggested that man's emotional behavior as well as his physical structure were genetically determined and had their origin in animals lower in the evolutionary series. Such a notion gave further impetus to the firmer establishment of the concept of a hereditary component in intelligence and personality. This latter line of thought had already been undertaken 3 years earlier by Galton, who published his observations that eminent men tend to have eminent sons in a book entitled *Hereditary genius* (1869). In 1883 he introduced the important co-twin method of studying heredity.

Francis Galton (1822–1911) has had a great influence in all fields of psychology, not the least of which have been his contributions to measurement and clinical psychology. A man of genius, he was interested not only in genetics but in the statistical side of psychological measurement and individual differences. At a time when interest in the mentally deficient and in gifted people was growing, he became concerned with the possibilities of the mathematical analysis of the human faculties and the conversion of masses of data into meaningful and systematic expressions.

In 1846 Quatelet, a Belgian statistician and astronomer, had pointed out that the principles of probability which had been developed by Gauss and Laplace could be applied to human measurements such as height and weight. Using French soldiers, he plotted the curve of probability which today we understand as the normal curve.

From this beginning Galton devised a form of standard score method so that measurements such as height and weight which are expressed in different units could be directly compared. From this he was able to point out the relationship between these two measures in a quantitative way using the method of correlation. Karl Pearson, a brilliant mathematician and friend and biographer of Galton, worked out the actual product-moment correlation formula. More interested in mathematical and scientific theory, Pearson continued in this area of measurement, founding a biometric laboratory and writing the classic *Grammar of science* (1892). Galton, on the other hand,

was interested in statistics primarily as a tool, and his intense intellectual curiosity and great ability pressed him into many areas in which he did pioneering work. Some of these efforts were directed toward human imagery and sensory-motor functions as well as the measurement of intelligence. He published his *Inquiries into human faculty* in 1883.

In 1882 Galton established an anthropometric laboratory in South Kensington Museum, London, for the purpose of collecting large numbers of physical and psychological measurements on people. Some of these psychological measures included tests of reaction time, sensory acuity, and motor skills.

He had observed that discriminative ability among idiots for heat, cold, and pain was rather poor. Galton believed that the various tests of sensory capacity would differentiate between persons of high and low intelligence. In his emphasis on sensation as the important human faculty, he was responding to the influence of Locke. Galton understood the essentials of good test construction and validation. He realized that a valid test must be correlated with an outside criterion. He selected people of extreme differences in mental ability for his sensory-motor tests. Had he not been diverted to other problems, Galton would no doubt have discovered what was later apparent, that these tests did not measure intelligence. He left this line of attack for others to develop and went on to study the sensitivity of various animals to high tones, inventing for this work the Galton whistle.

He noted, in addition to physical and sensory differences, striking variation among both people and animals in emotional constitution and likes and dislikes. He originated the use of the questionnaire method which he used to evaluate traits of character and temperament. He used this method to investigate mental imagery. These efforts of Galton stimulated men like Cattell to explore the rich field of individual differences in capacity.

The measurement of physical and psychological traits in humans actually did not begin with Galton. The idea that personality can be measured may be found even as early as 300 B.C. Aristotle was concerned with the physiognomies of people and their relation to behavior. This point of view that such a relationship could be found was little altered or expanded until the time of Emperor Francis Joseph. A field of study called "phrenology," study of the contours of the skull, was introduced at that time by Gall. Gall began lecturing in Vienna in 1796, but he was prohibited from talking in 1802 on religious grounds. Phrenology was advanced, however, by his students Spurzheim and Combe. Later in Italy, an anthropologist named Lombroso claimed that a number of bodily characteristics were predictive of criminal tendencies. Both phrenology and Lombroso's physiognomic ideas, as they were stated, eventually became discredited, although their subsequent influence on psychology was important. The use of complex intellectual processes to measure intelligence did not become popular until Binet.

We must note here that a major trend in the development of the various roots of clinical psychology, and psychology in general, was the gradual change toward a more scientific orientation. In 1879 the first formal psychological laboratory was founded at Leipzig by Wilhelm Wundt. This event had been stimulated by growing interest in psychological matters and in turn had the effect of helping to formalize psychology and stimulate new investigations. Interest in the laboratory was primarily centered around the measurement of sensory experience. Physiological psychology from Cullen and Haller in the eighteenth century through Bell and Magendie in the nineteenth had begun to move ahead rapidly. Psychophysics, beginning with Fechner and advanced by Wundt's laboratory, represented a real advance in modern scientific psychology. Prescientific psychology, in such forms as phrenology, astrology, and physiognomy, was beginning to die.

We have said that an American psychologist by the name of Cattell had become interested in the differences between people in the sensory-motor funtions measured by Galton. In spite of Wundt's objections, Cattell, who took his doctorate at Leipzig, did his work in individual differences in reaction time in 1886. He believed, as had Galton, that this was essentially a measure of intelligence. After he completed his dissertation, Cattell returned to the United States.

In 1890, in an article called "Mental tests and measurements," Cattell introduced the term "mental tests" for the various measures which were then in use in his own laboratory in the University of Pennsylvania. Cattell went further than Galton in emphasizing the need for standardization of test procedures in order to obtain comparable measurements. In addition to sensory-motor and physical data, Cattell obtained information on such things as personal traits, diseases, dream habits, artistic tastes, recreational preferences, and future plans. Later, at Columbia University, Cattell and Farrand (1896) obtained these measurements on 100 freshmen students and again at the end of their sophomore and senior years. In their published article the authors took note of suggestions by Münsterberg and by Binet and Henri favoring tests of a strictly psychological nature. But they pointed out that "if we undertake to study attention or suggestibility, we find it difficult to measure definitely a definite thing." They favored more objective and easily measured functions.

Other psychologists, following in Cattell's path, turned to measurements of vision, color preferences, hearing, perception of movement and time, pain sensitivity, reaction time, rote memory, imagery, etc., in the hope of predicting capacity. Jastrow in 1892 used these measures at the University of Wisconsin. Boas, at Clark in 1891, also made use of these simple tests on about 1,500 school children. He also obtained teachers' estimates of the children's "intellectual acuteness." Only the memory-test results were pub-

lished,[1] although this represents the first formal attempt to use an outside criterion of intelligence such as Galton had originally suggested but had never done. Gilbert (1894) employed several mental tests with about 1,200 children at New Haven, Connecticut, an experiment which appears to have interested Binet because in only two of the tests, rate of tapping and judgment of length of distances, did the brighter children surpass the dull ones. Ratings of brightness were made by the children's teachers and used as the criterion measurement.

While most American testers were emphasizing the type of measurements used by Cattell, Münsterberg (1891) was suggesting the use of such techniques as reading aloud; associating appropriate colors with objects; classifying animals, plants, and minerals, cloth, food, bodily parts; addition tests; judgments of the length of lines; and other more complex processes than those used by Cattell. In 1895 Kraepelin, who was professor of psychiatry at Heidelberg, proposed that a different series of mental capacities be used as guides in the construction of tests. These traits included (1) the ability to be influenced by practice, (2) the persistence of practice effects, (3) general memory, (4) special memory, (5) fatigability, (6) recovery from fatigue, (7) depth of sleep, (8) concentration of attention against distraction, and (9) adaptability to effective work under distraction. Moreover, Ebbinghaus concluded, as a result of a testing experiment in the city of Breslau, that the important function in intelligence was in the combination or organization of the facts observed by the person. He found a high degree of correspondence between scores in his completion test and degree of intelligence.

In the United States, testing did not gain great enthusiasm until, at the turn of the century, Binet presented strong positive evidence of its practical usefulness. The reason for this is probably the fact that most of the American testing was in the tradition of Galton and Cattell, and these sensory-motor tests were not demonstrating any great discriminative power. The study which hastened the end of the early American form of intelligence testing was done by Clark Wissler in 1901. Wissler, a student of Cattell, analyzed some of the data from the psychological and anthropometric measurements of Cattell obtained from college students. For the first time in such a study, very precise correlations were made between average college grades, psychological tests, and physical tests. The correlations ranged from —.28 to .39, "showing little more than a mere chance relation." This study, probably more than any other, cut short the attempt to predict complex abilities from simple ones. It threw the spotlight on Binet, who, having taken note of the two schools of thought on testing even before Wissler's study at

[1] Bolton, T. L. (1891–1892), reported the results of the analysis of these memory data.

Columbia, had pressed for the use of complex processes in predicting intelligence.

We have noted that by the middle of the nineteenth century interest in mental deficiency had reached a high point, but accurate methods of measuring level of ability had not yet been developed. Various kinds of criteria had been used including physiognomy and rough observations of the achievement of children relative to their ages. These methods had been mostly qualitative and subject to all sorts of bias and distortion. In 1896 Binet and Henri described a series of tests to measure such faculties as memory, imagery, imagination, attention, comprehension, suggestibility, aesthetic appreciation, sustained effort in muscular tasks, moral sentiments, motor skill, and visual space judgment. These tasks were tried out during the succeeding years on school children varying in age. Observations were made of the manner in which the scores improved with age and grade. Some of the tests showed increasing score with age and grade and seemed to distinguish the bright from the dull children. Others did not and were eliminated.

The real contribution of Binet lay in the use of the age scale. The percentage of children who solved each task increased with age and grade. The method was entirely empirical. It was more difficult for children of the same age to do one task than another. Binet's method was more successful than many previous attempts by others in validly differentiating bright from dull children and, in a quantitative way, provided a rough measure of intelligence.

In 1904 Alfred Binet and his colleague Simon were consulted by the Paris Minister of Public Instruction concerning the problems of the education of retarded children. Binet favored special classes, but this raised an immediate need for the accurate differentiation of the feeble-minded children from the lazy ones whose academic performance was poor. Binet and Simon constructed their first formal scale in 1905. It was a short test of 30 items with a small range of difficulty providing only an approximate estimate of capacity. But it was a major landmark in the development of clinical psychological techniques, and while slow to be accepted in the United States, it was a turning point in mental testing. Although Binet was not a clinician and never saw a patient, in many ways his work marks the beginning of modern clinical psychology.

MODERN CLINICAL PSYCHOLOGY

From the early beginnings of mental measurement we can trace two main lines in the more recent development of clinical psychology. One line consists of professional movements and the growth of organizations and psychological clinics. The other line follows the perfecting of tools of measurement without which the enormous growth of clinical specialty would not have

occurred. Let us first try to sketch briefly the progress in the establishment of clinical tools of measurement.

Tools of Measurement. In attempting to follow the establishment of special techniques, we find that the little trickle of measuring devices that began with Binet soon became an avalanche. After a number of years of this progress it becomes increasingly difficult to attempt to list each new tool. A complete chronology of these would be of little value. We shall select some of the major developments, somewhat arbitrarily, realizing that many presently important instruments will be left out. Our purpose here is primarily to illustrate.

Intelligence Testing. We have indicated that the interest in the measurement of intelligence has a long history. However, the modern and successful approaches to intelligence testing may be considered to have begun with Binet. Binet began his work in 1895 and published the first really workable intelligence test in 1905 with Simon. A second version was published in 1908 which was an improvement over the earlier one and made use of the new concept of mental age.[1] Before his death Binet published a second revision in 1911. In 1910 Goddard in America translated the Binet scales into English and published them. A few months later in 1911 and again in 1912 Kuhlmann revised the Binet tests. Other revisions by Bobertag in Germany (1911), Terman and Childs (1912), and Yerkes, Bridges, and Hardwick (1915), who used a point scale instead of an age scale, followed. In 1916 Terman, at Stanford University, published a revision of the Binet tests which multiplied the use of the Binet technique in this country and stood as the best and most popular intelligence test for children until 1937.[2] In 1937 Terman and Merrill published a new and the latest revision, larger in scope than any previous version.

Group intelligence tests had their beginnings during the First World War. A special committee of the American Psychological Association was appointed with R. M. Yerkes as chairman to devise methods of classification of men in accordance with their abilities. In 1917 with the aid of Arthur Otis, who had been constructing his own group test, the Army Alpha was designed, followed by the nonlanguage version, the Army Beta. In 1914 Knox had reported on his efforts to construct a test which could be used with illiterate immigrants at Ellis Island. By 1917 Pintner and Paterson (1917B), introduced the first well-standardized individual performance (nonverbal) intelligence scale. In 1930 the still widely used Arthur Point Scale appeared, followed by the Cornell-Coxe in 1934.

[1] Actually Binet was not really the first to use the concept of mental age. Although he did not refer to mental age, S. E. Chaille in 1887 published a series of infant tests (up to 3 years of age) in the *New Orleans Medical and Surgical Journal.* They were arranged in accordance with the age at which they were usually passed. This never got wide attention.

[2] For more detailed accounts of the early revisions, see Peterson, J. (1925).

By the 1920's individual, group, verbal, and nonverbal intelligence tests had become available. The concept of the intelligence quotient had been popularized, and intelligence testing was becoming the rage. As an illustration of the interest, the National Society for the Study of Education devoted a full issue of its 1928 yearbook to intelligence testing. During this period clinical psychologists were identified primarily as intelligence testers.

Aptitude testing had its beginning following the First World War. It was stimulated by the increasing interest in group testing which had originated in the intelligence field and by the recognition of the values of personnel selection. In 1919 Seashore published his work on musical talent. His test represented an attempt to measure basic functions like the detection of rhythm, memory for tones, etc. Seashore believed that these abilities were related to potential success in a musical career.

Interest tests began to develop around this period also. In 1922 Freyd introduced an Occupational Interest Blank which was designed for use in vocational guidance. This type of test was later followed up by the still unexcelled Strong Vocational Interest Blank (1927) and the simpler Kuder Preference Record (1942). The primary function of these pencil-and-paper inventories has been in the determination of interest patterns to help in vocational counseling.

Mechanical ability tests were originated by Stenquist in 1923. Later a large number of parallel instruments were designed to measure a person's knowledge of mechanical principles or his ability to appraise spatial relations. These were also used in vocational guidance or as screening tests to predict a potential student or employee's success at a mechanical trade or profession. Other kinds of aptitude tests sprang up at increasing rates in later years.

Another landmark in the testing field was the publication by Gesell (1928) of a series of observations and tests of development for very young children. This early work along developmental lines with infants and small children was later taken up by many other child psychologists. Not only have developmental schedules arisen from this beginning, but children's tests for the prediction of later intellectual level have also been constructed as a result of this line of attack.

In 1927 Thurstone began his important theoretical work on the factor analysis of intelligence. As a consequence of this effort Thurstone suggested that intelligence is composed of a number of independent components or factors which could be isolated. His view was in direct contrast with the concept of Spearman (1927), who many years before had propounded the idea that some general factor could account for most of the variation in what we call intelligence. We shall consider these points of view in more detail in a later chapter. In 1938 Thurstone published the Primary Mental Abilities Test which was based on more than 10 years of factor-analysis research.

Up until 1939 there were no adequate intelligence tests available for use with adults. The Stanford-Binet was appropriate only for children up to about 15 years of age, and although it was often used for older people, it was poorly designed for that purpose. In 1939 Wechsler introduced the Wechsler-Bellevue Scale for measuring adult intelligence. The test provided a single over-all intelligence score as well as a series of subtest scores which could be used for diagnostic purposes to study the strengths and weaknesses in a person's pattern of abilities. This was the first well-standardized individual intelligence test suitable for use with adults of all ages. As such, it has no peer at the present time.

Personality Measurement. While rapid progress was being made in the area of the measurement of intelligence, other kinds of devices were being developed to measure various aspects of personality. Although they began later, personality tests were being constructed no less rapidly than intelligence tests. There was, however, greater confusion over the theoretical issues of personality measurement which involved a much more complex problem.

In 1918 the first neurotic inventory appeared. It was designed by R. S. Woodworth and called the Personal Data Sheet. Originally intended for military screening purposes, it later became popular in civilian clinics. This early questionnaire, based upon the common symptoms in neuroses, became the model for a great variety of adjustment inventories which followed it by the hundreds.

The Pressey X-O Test for investigating emotions came out in 1921 and was based on a somewhat different principle than the Woodworth Personal Data Sheet. Subjects had to cross out various alternatives which they did not like. Later the Downey Will-Temperament Test (1923) appeared. This nearly forgotten device used handwriting as the measure of temperament. In some ways it is related to the later interest in expressive movements which we shall discuss in another chapter. In 1924 Marston introduced his introversion-extroversion tests which were based on the concept of dichotomous types of personality. Marston is best known for his research on the distribution among the population of this extroversion-introversion typology.

Voelker (1921) was one of the first to prepare a battery of performance tests of personality. His contribution lies in the fact that he made use of concrete situations to observe behavior as it actually occurs in life in contrast to the earlier emphasis on the pencil-and-paper type of tests. The importance of this type of approach to personality measurement is discussed in a later chapter. Hartshorne and others (1928–1930) enlarged this technique of Voelker in a famous and extensive study of character in children.

Another well-known testing development in the personality area was the Study of Values which was introduced by Allport and Vernon in 1931. Their test was based on the six types of men described years before by the philosopher Spranger. The values represented were: aesthetic, religious, eco-

nomic, political, social, and theoretical. The test has been given a wide play in recent research on the relationship between personal values and perceptual recognition.

The number of different types and examples of nonprojective personality tests available today is too large to explore here. A fuller account of them may be found in a later chapter in this book. We have tried to cite a few examples of instruments which were developed relatively early and which represented somewhat novel approaches in their time. The number of instruments which became available with successive years is astounding. Some, like the Downey Will-Temperament Test, are practically never used today. Others, like the Allport-Vernon Study of Values, are quite useful for the student to know. By far the greatest proportion of the early inventories are unknown to the majority of clinical psychologists.

We have purposely refrained from mentioning the projective techniques in the preceding section because their development is really a story of its own, and they hold such an important position in modern clinical psychology and personality measurement that they should be treated separately. We must note again that we will discuss this field in greater detail in a later chapter. Our purpose here is primarily historical.

The projective techniques arise from the ideas of the depth psychologists who introduced the notion that behind the surface behavior of the individual lie deeper layers of motivation and experience which are the important determiners of behavior. Although they are not necessarily dependent upon the Freudian concepts of personality, the projective procedures were stimulated primarily by the psychoanalytic development. At the present time they dominate the approaches to personality measurement.

The grandfather of the projective test appears to have been the word-association technique first used by Galton in 1885 and brought into greater prominence by Bleuler and Jung around 1905. It is still a useful test for clinicians, although the approach has undergone a number of modifications by different workers. Kent and Rosanoff (1910) used the approach in a different manner from that first advocated by Jung. They studied primarily the content of the associations from the point of view of norms for psychotic and normal people. Jung, on the other hand, had suggested that, when any subject is asked to respond quickly with the first association that comes to his mind, various behavioral signs (which were called complex indicators) such as blocking, delays, unusual responses, etc., were indicative of underlying psychological complexes or emotional disturbances.

A most important development in the history of the projective techniques was the introduction of the Rorschach test. In 1921 Hermann Rorschach, a Swiss psychiatrist, published the result of his research on the use of ink blots for differential diagnosis. The idea for the use of ink blots was not entirely original, although the use that Rorschach made of them was quite unique.

The approach rested on the simple assumption that a person would produce important information about himself when he was required to interpret an ambiguous stimulus. Rorschach believed that these projections of the individual's personality reflected the manner in which he responded to real-life experiences.

The Rorschach test did not become popular in this country until a number of years later when manuals and norms became available through the work of Beck (1937) and Klopfer (1937). An enormous number of articles have been written about the technique since then, and its use has become a somewhat controversial issue in present times. Recent experimenters have attempted to validate some of the concepts concerning the test's interpretation.

Another major development in the projective-test area was the publication of an instrument based on an idea similar to the Rorschach test but differing in terms of the kind of information provided In 1935 the Thematic Apperception Test was introduced by Morgan and Murray and has frequently been used as a companion technique with the Rorschach in the psychological clinic. The test consists of a series of pictures, mostly drawings of people in ambiguous situations, which are used as starting points for an imaginative story by the subject who projects into these fantasies his own needs and experience.

The field of projective testing has been filled with exceedingly rich ideas. Many types of stimulus material have been used. It is not the purpose here to review all of them since this will be done in a later chapter. Techniques such as dream interpretation, play, drawing and painting, psychodrama, puppet shows, sentence completions, etc., have been greatly expanded today along with the theoretical background of the projective field. The basic assumptions underlying all of them are similar and will be reviewed in more detail later. The projective approach has greatly enlarged the scope of the clinical techniques since the earliest personality tests and shows promise of even greater development in the future.

The Establishment of Clinics and Clinicians. As we have noted earlier, the growth of clinical psychology which is reflected in the establishment of formal clinical organizations of various kinds runs somewhat parallel to the perfection of the techniques used by clinicians. We find that, in its early phases, the number of clinics and the employment of clinicians was limited but that, in a short space of years, it became impossible to include each new development in a narrative. As in the case of the measuring instruments, this growth rests to a large extent upon the social atmosphere of the times, the humanization in the field of abnormal psychology, the establishment of mental hospitals, progress in child study, the development of theories of personality and techniques of measurement, and the expansion of the scientific methods to problems of behavior.

The Formal Beginnings. As a result of his interest in the mentally and morally retarded child, Lightner Witmer had examined such a child in the psychological laboratory at the University of Pennsylvania in 1896. In that year at the meetings of the American Psychological Association, Witmer presented a paper discussing a series of proposals about the investigation of school children's problems using laboratory methods. Interest in this sort of venture had not yet ripened. As Witmer's subsequent work along these lines continued, the need developed for quarters in which children could be kept under skilled observation for varying periods of time. The beginnings of this special activity in 1896 and the expansion which followed are usually considered to represent the foundation of the first psychological clinic in the United States.

Witmer's procedures, though nowhere described in great detail, were similar to those found in child clinics today. In the early work, few tests were available, though even later Witmer never felt he should be bound by their use. The child was studied thoroughly through case histories, physical examinations, and observations of behavior. The goal was to determine the reasons for the deviant behavior of the child and to devise a program for the improvement of it.

In 1898, R. T. Wylie, a psychologist and physician, was appointed to the State Institution for the Feebleminded at Faribault, Minnesota. His time was spent primarily in testing the institutional children. The laboratory there was expanded to seven rooms for research and clinical work in 1900. The type of testing included mainly studies of sensory acuity, tests of fatigue with an ergograph, and tests of memory. No other state appointments were made until 1909. Wylie's appointment represents the first state psychologist's job.

In 1905, after persistent effort, the Superintendent of the Training School for the Feebleminded at Vineland, New Jersey, managed to obtain a department of research supported by private endowments. He appointed Henry H. Goddard, who later translated Binet's work and became well known as the psychologist at the school and through his famous report on the Kallikak family (1912). Under his guidance the work there progressed and the clinic enlarged. It was taken over later by Porteus in 1919 and then Doll in 1925. Doll has been the clinic's director until very recently.

The city of Rochester in 1906 began forming special classes for subnormal children and appointed a director to examine children and organize these classes. No adequate measuring devices for evaluating intellectual level were as yet available. By 1909, because of the enormous amount of labor required and the development of testing, a Binet examiner was appointed for the city. This psychologist's very title describes his main responsibility as a clinician.

In 1909 a rapid development in applied psychology was taking place. A

number of psychological clinics were formed. This was the year in which Clifford W. Beers founded the National Committee for Mental Hygiene. This agency later operated a number of experimental child guidance clinics staffed by psychologists, psychiatrists, and social workers. William Healy, a neurologist, became director of the newly founded Juvenile Psychopathic Institute of Chicago in that year. Grace Fernald, one of the early clinical pioneers, was made his psychological assistant. At about the same time the Universities of Minnesota and Washington introduced clinical work into their departments of psychology and later formed their own psychological clinics. The Washington clinic under Stevenson Smith became affiliated with the Juvenile Court with the cooperation of Maude Merrill, director of the court department of diagnosis. Merrill is best known today for her work with Terman on the 1937 revision of the Binet scale. It is interesting to note that, during the year 1913, this clinic in Washington examined 1,186 children. The clinical expansion was well under way by that time. Edmund Huey was appointed as a psychologist at the State Institution for the Feebleminded in Lincoln, Illinois, in 1909. Also in that year Clark University established a psychological clinic. J. E. Wallace Wallin, very well known as a clinical pioneer, was at this time active as a clinician at East Stroudsburg State Normal School in Pennsylvania. In 1910 Wallin became director of a clinical laboratory of the National Dental Association. By 1912 he established an active clinic at the University of Pittsburgh. The number of clinicians and clinics functioning in 1909 was still countable but rapidly increasing.

In 1910 the Iowa State Institution for the Feebleminded appointed P. F. Lange to its staff, and a psychological clinic was begun at the Woman's Medical College at Philadelphia. In 1911 Gesell established a psychological clinic at Yale and in the following decade and a half made detailed infant observations which led to the publication of the infant-development schedules for which Gesell is famous. By 1912 the Bedford Reformatory for Women established a Bureau of Social Hygiene which since then has continued to study the causes and treatment of delinquency in women and girls. The New York Post-Graduate Medical School and Hospital as well as the Hospital of the City of New York also established clinics in that year. In Boston an outpatient clinic was provided at the Boston Psychopathic Hospital, and in Hartford, Connecticut, the school system hired a psychological consultant to study problem children.

In 1913 similar developments had occurred at the State University of Iowa. The city of Albany followed suit. By 1914 strong clinical activity in the form of either clinics or employed clinicians in the hospitals, reformatories, school systems, or universities had developed at Tulane and Cornell Universities and in the cities of Trenton, New Jersey; Philadelphia, Pennsylvania; Los Angeles and Oakland, California; and other geographical areas. The progress had been so great that Theodate L. Smith in 1914 published an

article on the development of psychological clinics in this country from which much of the above information was taken.

The function of clinical psychologists was becoming more clearly established. The job they could do was becoming more apparent. The number of their techniques was being increased. From this time on it becomes impossible to trace effectively the creation of single clinics. In more recent times the professional and scientific problems springing from this tremendous upsurge have, to a large extent, crystallized but have by no means been settled. We shall see that today we are still very much concerned with such problems as the status of the clinical psychologist as a nonmedical practitioner, his function in and out of the clinic, and the nature of his training.

Later Expansion. In 1914 Wallin investigated the extent of the psychological clinics in the United States. By questionnaires to universities and colleges, normal schools and medical schools, he located 19 bona fide clinics. In 1935 the Clinical Section of the American Psychological Association published a directory [1] which listed a total of 87 clinics directed by psychologists, which included those under additional auspices such as social agencies, state, city, and county departments, private endowment, etc. Half of the original clinics listed by Wallin were no longer in existence in 1935. It should be noted, however, that a considerably larger number of clinics not listed by the APA were under psychiatric supervision. In 1936 the National Committee for Mental Hygiene listed 676 psychiatric clinics.[2] Many psychologists found employment in these medically sponsored agencies.

The greater proportion of time in the clinics listed by the National Committee was devoted to child problems, although most of them worked with a certain number of adults. The kinds of problems dealt with ranged from those created by school and vocational adjustments, to delinquency, orphanage and penal institution problems, speech disorders, personality disorders, family conflicts, sensory defects, and feeble-mindedness. Louttit (1939) reported on the type of work that was being done by the senior psychologists on the staffs of the clinics listed in Clark's directory (1936). Table 1 shows the results of the questionnaires he sent out which includes the answers from 111 clinical psychologists.

The table which was published by Louttit and has been printed here does not really answer the question of what was the major work of the senior psychologists of the psychiatric clinics listed in Clark's directory. Actually a variety of activities were found as shown in Table 1. But there can be no doubt that psychometrics occupied a great deal or most of the psychologist's time. At that time many people still considered testing, especially intelligence testing, to be the main function of the clinical psychologist.

[1] Guide to psychological clinics in the United States. APA Clin. Sec. *Psychol. Clin.,* 1935, **23,** 9–140.

[2] This report was written by Clark, M. A., 1936.

TABLE 1. TYPES OF WORK DONE BY 111 PSYCHOLOGISTS IN CHILD GUIDANCE CLINICS *

	No. reporting	Per cent
Psychometrics	96	86.5
Educational guidance	81	73.0
Vocational guidance	77	69.4
Diagnostic interviewing	72	64.9
Remedial teaching (speech, reading, etc.)	49	44.1
Psychotherapy (therapeutic interviewing)	39	35.1
Teaching	10	9.0
Administration	4	3.6
Social investigation	3	2.7

* From Louttit, C. M. The nature of clinical psychology. *Psychol. Bull.*, 1939, **36**, 374. By permission of the publishers.

It is interesting to note that a fair number of the clinical psychologists who responded to the questionnaire indicated that they performed psychotherapy. Even as far back as 1938 therapy was being done in clinics by some psychologists. However, a glance will indicate that clinical research, an activity which is considered of the highest importance in the present-day duties of clinicians, is not even listed in the table.

We have pointed out several times that the first clinics sprang up in response to the expanding interest in the mentally retarded or disturbed child. The shift in dependency of the modern clinic from child problems to cases of adult maladjustment is one of the chief changes which have occurred in the years which followed the early clinical development. While some present-day clinics are devoted entirely to child problems, adults make up the largest part of the patient load. Moreover, while the earliest clinics had few instruments to aid in the evaluation of patients, the modern clinic abounds in tests and devices of all kinds to facilitate the task of diagnosis.

Along with the increased population of adults who sought assistance in psychological clinics came the development of a new kind of clinic organized by universities, social agencies, and private capital. Many universities had been operating psychiatric types of clinics for the treatment of neuroses and minor maladjustments. However, the development of aptitude testing resulted in the introduction of the vocational guidance clinic. These vocational guidance clinics yearly see many thousands of people of all ages who are seeking educational and vocational counseling. In many ways this activity has become big business and has been greatly oversold to the public and often to psychologists themselves. A fair proportion of psychologists who identify themselves as clinicians are engaged, either part-time or full-time, in the practice of vocational guidance.

We are now prepared to discuss the current status and problems of clinical psychology. The Second World War has given great impetus to the further expansion of clinical psychology which even before had shown an inclination to grow like the fabled beanstalk.

THE CURRENT STATUS OF CLINICAL PSYCHOLOGY

In 1941 Finch and Odoroff studied the employment trends in applied psychology in general and found that between 1930 and 1940 there was a 210 per cent increase in nonteaching psychological positions. Watson (1949B) has suggested that about 1,500 psychologists served in the armed forces during the Second World War. The demand thus begun during the war for applied services has been reflected in the postwar activities of psychologists. Following the war, this demand, particularly for clinical services, has skyrocketed. The Veterans Administration instituted a program of training of clinical psychologists to fill the needs created by the large number of clinics and hospitals built for veterans. Darley and Wolfle (1946) have suggested that the Veterans Administration programs will require 4,700 clinical psychologists and vocational advisers. Estimates of the eventual need for clinicians run between 10,000 and 20,000 if the financial support of these services is continued. These claims seem to be somewhat expansive but give a rough idea of the extraordinary growth predicted for clinical psychology in the future.

1945 there were approximately 6,000 persons in the APA. Today there are about 8,600. According to a report by Hilgard (1945) based on ballots mailed to these members (3,680 usable answers were returned), 53 per cent either gave the clinical division of the APA as their first choice or selected it as at least one of their divisional preferences. While data of this kind are difficult to interpret correctly, they seem to indicate that over half of the psychologists replying to the questionnaire are in some degree concerned with clinical problems. Thorne (1945) counted about 830 clinicians directly employed in schools, guidance centers and clinics, hospitals, and penal institutions. These figures are surely minimal, since they exclude academic psychologists doing part-time clinical work as well as those in consulting and private clinical practice.

In June, 1949, a post-card questionnaire was mailed to all APA members in this country, which included about 6,500 persons. The questionnaire concerned only the first choice preference of its members in terms of the APA divisions. The specific question as stated was: "If you could vote for the Council Representation of only one division, through which division would you prefer to vote?" The results of this poll can be seen in Table 2. It gives

a rough indication of where and how interests of the APA membership are divided.

PROFESSIONAL PROBLEMS

The growth and present strength of clinical and personality-oriented psychology is abundantly clear from the 1949 APA questionnaire. It is not surprising that this extraordinary expansion has created many serious professional and scientific problems. This development together with the youth of the specialty and its limited scientific resources have given psychologists cause for deep concern. In recent years many discussions of these professional problems have ensued.

WHAT IS A CLINICAL PSYCHOLOGIST?

Nowhere is there real agreement over the exact role which should be played by the clinical psychologist. Most of the discussions of the subject merely describe the type of work that has been and is being done. This work varies from situation to situation in accordance with the kind of position held as well as the special orientation of the organization in which the psychologist is employed. In a psychiatric hospital his role may be restricted to diagnostic intelligence testing, may include real responsibility for case evaluation and therapeutic recommendation, or may involve therapeutic contacts and the supervision of training and research. There is no standardization. In one instance he may be a psychometrist, in another his duties may overlap greatly with a psychiatrist, in a third he may be strictly or mainly a scientist. There is no doubt, however, that since the Second World War large numbers of clinical psychologists are taking greater, often primary, responsibility for the diagnosis and treatment disposition of all kinds of clinic patients. Professionally speaking, the clinical psychologist may be employed in a prison, a detention home for delinquents, a school system, a child or adult guidance clinic, a vocational guidance center, a hospital, a university counseling center, a rehabilitation agency, a nursery school, a school for the deaf, an old-age counseling center, an employment service, an industry, a private practice, a research agency, a university psychology department, and other formalized situations. The wide range of these functions has been fully outlined by Watson (1949C). It is no wonder there is little agreement over what the clinician should be trained or permitted to do.

Shakow (1945) has pointed out the confusion that at present exists over the role of the clinician by attempting to classify the diversified interests of clinical psychologists. He outlines what he believes are four major emphases, in a sense, four different kinds of clinical psychologists. The first seems mainly oriented toward a dynamic approach to personality, affiliated mainly with psychiatry, dynamic psychology, and psychoanalysis. It seeks to under-

TABLE 2. ANALYSIS OF REPLIES TO

Number and name of APA division	Number of members in each division at time of survey in June, 1949	Number and per cent of division members who replied	
		Number	Per cent
	(1)	(2)	(3)
1. General	533	389	73
2. Teaching Psychology	200	145	73
3. Experimental	493	313	64
5. Evaluation and Measurement	396	259	65
7. Childhood and Adolescence	339	208	61
8. Personality and Social	523	305	58
9. SPSSI	454	311	69
10. Esthetics	61	32	53
12. Clinical and Abnormal	1,047	815	78
13. Consulting	179	115	64
14. Industrial and Business	218	185	85
15. Educational Psychology	391	227	58
16. School Psychologists	219	168	77
17. Personnel and Guidance	537	429	80
18. Public Service	93	56	60
19. Military Psychology	169	132	78
20. Maturity and Old Age	126	81	64
Totals	5,978†	4,170†	..
Weighted average	.....	.....	70
(No choice indicated)	.....	.....	..
(Grand total)	.. ..	.....	..

† Includes members of two or more Divisions.

* Post-card questionnaires were mailed to the total APA membership, except for those residing in foreign countries, on June 17, 1949. By July 15, 3,500 had been returned. The above tabulations are based on these 3,500 replies. (More than 200 replies were received between July 15 and Oct. 15, 1949, but their omission here does not materially affect the character of the results.)

The 3,500 replies represent a 54% sample of the population. The population: 79% were Associates, 21% Fellows and Life Members; sample—74% were Associates and 26% Fellows and Life Members. The population: 68% males; the sample—72% males. The population: 57% were members of one or more Divisions; the sample —63% were members of one or more Divisions. The percentage of members per Division in the sample is given for each Division in column (3) above.

Post-card Questionnaire, June, 1949*

Number of first-choice preferences per division		Ratio of all "first-choice votes" per division to the number of members in each division who replied	Ratio of "first-choice votes" from members of divisions to the number of members in each division who replied	Approximate number of first-choice voters that each division might be expected to have as of June, 1949
From all APA members (4)	From only members of at least one division (5)	(4)/(2)	(5)/(2)	(1)[(5)/(2)]
206	154	.53	40	213
70	41	.48	.28	56
336	241	1.07	.77	380
148	102	.57	.39	154
104	80	.50	.38	129
131	88	.43	.29	152
124	106	.40	.34	154
15	12	.47	.38	23
1,100	663	1.35	.81	848
52	33	.45	.29	52
262	152	1.42	.82	179
128	86	.56	.38	149
121	91	.72	.54	118
445	245	1.04	.57	306
18	10	.32	.18	17
31	16	.23	.12	20
20	16	.25	.20	25
3,311	2,136	.79	.51	
. . .	. . . . .			
(189)	(76)			
(3,500)	(2,212)			

References to "first-choice votes" in the table are based on replies to the following question: "If you could vote for the Council Representatives of only one Division, through which Division would you prefer to vote?" (This is the principle of *single suffrage* referred to in the questionnaire.)

In the above table, the differences between columns (4) and (5) suggest potential recruiting strength of Divisions for non-Divisional APA members.

The ratios of (4)/(2) provide a rough yardstick of total APA membership's primary Divisional interests. And the ratios of (5)/(2) furnish a similar yardstick of Divisional members' primary interests. The estimates of the last column have an unmeasured margin of error, but nevertheless provide a rough index of the minimum number of first-choice voters each Division might have expected last June.

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stand the development of motivation and personality organization, using the individual case as a focus to obtain generalizations about classes of people. The second, according to Shakow, is concerned mainly with the use of test devices to investigate the structure of personality and the organism's capacities and skills. These people maintain close ties with the educational and vocational workers. The third group appears to combine the interests of the first two, both diagnosis and treatment, its emphasis, however, being put on the assistance of the patient in trouble. The fourth group is designated by Shakow as the experimental approach, oriented either toward the cross-sectional characteristics of the person in trouble or toward the individual dynamic side of personality organization. Their interest is in the formulation of principles of personality. Shakow believes, as do the authors, that all these approaches are important and should be incorporated into the training of clinical psychologists. He sees a trend toward the dynamic approach. There is no present certainty as to where clinical psychology is heading. We feel that the fourth approach, an experimental orientation to personality dynamics, offers the greatest assurance of providing a solid, scientifically sound foundation for the young clinical psychology field.

There are a few special areas in which professional problems are created either by overlap with other fields or by the immediate and unsolved question of what contributions the clinical psychologist ought to be making.

One of the issues which have come to the fore in recent years concerns the extent to which the clinical psychologist should be permitted or encouraged to engage in therapy. There has been little argument that diagnosis and personality research have been at least two of the major functions of the clinician wherever he is employed. However, there has been some question, even among psychologists, concerning the propriety of the therapeutic role. No matter how the problem will be resolved in future years, there is no doubt that many psychologists are doing a great deal of psychotherapy Moreover, the Committee on Training in Clinical Psychology of the American Psychological Association (1947) [1] heavily stresses the therapeutic function as well as diagnosis and research.

The questions revolving about the training and functioning of the clinical psychologist have been discussed at some length by such writers as Eysenck (1949), Rosenzweig (1950A), Shakow (1942), Cattell (1948), and others. The first few chapters in Watson (1949C), continuing discussions in the *American Psychologist,* and the report of the Boulder conference (Raimy, 1950), provide some additional perspectives about these problems.

There is certainly no complete agreement on the part of psychologists concerning all the issues in the training and functioning of the clinical psychologist. These professional problems have been precipitated by the extraor-

[1] Recommended graduate training programs in clinical psychology. APA Com. on Training in Clin. Psychol. *Amer. Psychologist,* 1947, 2, 539–558.

dinary and rapid growth of the psychological discipline, and their solution depends upon the clarification of the functions of not one clinical psychologist but many different kinds serving many different needs.

THE APPLIED VERSUS THE THEORETICAL ISSUE

Clinical medicine deals with patients who arrive at the doctor's office or medical clinic with all kinds of complaints and symptoms. This picture may be contrasted with theoretical and research medicine which is concerned with the experimental study of organic pathology and theoretical attempts to understand human functioning and physical disease. Usually different physicians engage in the separate activities of applied and research medicine. In fact, Ph.D.'s in biology and physiology do a great deal of the research in the area of medical pathology.

In many ways a distinction between applied clinical psychology and the theoretical and experimental study of personality dynamics may also be drawn. As in the case of clinical medicine, the emphasis is placed upon the study of a particular patient. What is known about pathology is applied to the individual who is seen in the clinical situation.

Clinical psychology as a field has usually been defined as the application of psychological principles of behavior and pathology to the individual under study in the clinic. This is a definition which stresses the applied function of clinicians. It has been the most popular way of viewing the clinical specialty. Psychologists like Cattell (1948), Richards (1946), and Brotemarkle (1931) have always emphasized the applied side of the clinical field. The Clinical Section of the American Psychological Association published in a report in 1935 (p. 5)[1] the following definition of clinical psychology:

> Clinical psychology is a form of applied psychology which aims to define the behavior capacities and behavior characteristics of an individual through methods of measurement, analysis, and observation; and which on the basis of an integration of these findings with the data received from the physical examinations and social histories, gives suggestions and recommendations for the proper adjustment of the individual.

In many ways this definition describes what the majority of clinicians do. However, the flavor of the definition is somewhat unfortunate. Nowhere in this description can one find the recognition that the applied side of clinical psychology cannot be differentiated properly from research into personality dynamics. It is in part the observation of the person in the clinic which leads to the formulation of the principles of personality which are so vital in the

[1] The definition of clinical psychology and standards of training for clinical psychologists. APA Clin. Sec. *Psychol. Clin.*, 1935, **23**, 2–8.

diagnosis and treatment of the patient. Exactly what is it that the clinician applies? Surely it must be our knowledge about human behavior and its disorders. And who should obtain this information? According to the definitions which stress the applied side of clinical psychology, it is not the clinical psychologist who is charged with the discovery of the necessary principles. And yet, the best clinicians, for example, Freud, also theorize about personality dynamics.

The point we are making here is that Freud was a researcher as well as an applier of the principles which sprang from his clinical observations. If we continue to view clinical psychology as an application of principles of behavior, then we will leave the exploration of these principles to the experimental psychologists who do not see patients and are lacking in the excellent opportunity to observe adjustment failures which are so useful in serving as sources of theoretical hypotheses. It is unimportant to us whether or not the definition of the clinical specialty is changed. What we wish to do is to draw attention to the need for some present and future clinical psychologists to consider as their responsibility the making use of their opportunity to correct and enlarge our concepts of personality dynamics. When a medical or psychological clinician is confronted with the immediate problem of a patient in trouble, he must certainly bend his energies toward finding some techniques which would have application to the case at hand. He recognizes that the lack of scientific status of a technique cannot deter him from using it. It is even worse to sit idly by in the face of illness, twiddle his thumbs, and muse, "Oh, we just don't know anything about this problem yet." However, if he depends upon others to do research and to formulate the problems, then he will never make much of a contribution to his field, and he can be little more than a high-class technician.

We note that in the past few years a greater emphasis has been given to the theoretical and research aspect of clinical psychology. We are beginning to realize that the adequacy of our practice rests on the validity of our concepts. For convenience we have spoken of applied work in clinical psychology and theoretical work in personality dynamics. But, in reality, both are inextricably interwoven with each other. We may say that one psychologist is doing applied work and another theoretical research. But clinical psychology has to be concerned with both. It must be thought of as the study of individual cases in the clinic as well as the establishment of principles which allow us to fully understand these cases.

CLINICAL ART VERSUS CLINICAL SCIENCE

One more point must be made concerning the professional side of clinical psychology. In addition to the tendency to stress the applied aspects of clinical psychology, many people have maintained that the clinical specialty is

basically an intuitive art. The fact that people do differ so greatly in their ability to understand and deal with the neurotic or psychotic patient makes such a belief understandable. Furthermore, many of the principles which the clinician uses are untested and are based on subjective impressions. The variables in personality dynamics have not been fully identified, nor can their action be readily isolated or controlled. Indeed, rough classifications have been made, but, in general, the clinician in practice does use many of his own personal insights and talents developed through long contact with patients. He believes that these insights serve him well, although he has not been able to systematically evaluate his diagnoses or treatment procedures satisfactorily. However, he does observe that other clinicians often come to similar conclusions as he does and that he can seem to make sense out of a patient's case history and test data.

But calling clinical psychology an art obscures, to some extent, our great ignorance of the principles which govern abnormal behavior. Accepting the field as an art is a dangerous point of view because it carries with it the implication that these principles can never be known or scientifically verified. As an art the future of clinical psychology is exceedingly limited. It is necessary for the clinician to bring into the light, for hard-headed appraisal, his concepts and procedures. Many of his techniques and theories are undoubtedly useful. Others should, no doubt, be discarded. Scientific methods must and can be applied. New techniques for the verification of clinical principles based upon the logical methods of science are beginning to appear. Only the validation and expansion of our concepts of personality will ensure the necessary progression of the clinical field from an art to good scientific status.

CHAPTER 2

METHODOLOGY

In tracing the history of clinical psychology, we stated that, before real advances in knowledge could occur, it was necessary for psychology to take on the methodology of science. This began to happen near the end of the nineteenth century.

The discovery of empirical relationships and principles in every field of inquiry depends on a common methodology. To be sure, clinical psychology has its own particular techniques for making observations and measurements. These techniques, as well as a special vocabulary and kinds of problems, distinguish clinical psychology from other disciplines. The kinds of variables studied by clinicians differ from those of physicists, and the tools of study must therefore differ. But the things that hold sciences together are the general methods by which we can develop reliable knowledge. All sciences, though different from each other in specialized techniques, are alike because they use the same principles of logical analysis in the interpretation of observations. We shall certainly spend a great deal of time reviewing the special techniques which distinguish personality study and clinical psychology from other disciplines. But we must bear in mind that interviews, psychological tests, or particular measuring instruments are only the techniques of clinical psychology. They are adapted to the kinds of variables the clinician deals with and provide the data which, by the use of the scientific methods, can be evaluated and organized into facts and principles. Since ultimately we are seeking broad concepts of behavior as well as an understanding of the individual case, these scientific methods must concern us greatly. Even the intuitive judgments that are made about clinic patients can, and must, be evaluated ultimately in the light of these methodological principles. In this chapter we shall try to explore these scientific methods and show how they can be, and are, applied to clinical psychology.

OBSERVATION IN SCIENCE

Man depends largely on his sense organs to obtain information about the world in which he lives. Observation of nature by primitive and ancient man in the course of his struggle for survival led him to ask many questions which

he could not easily answer. The most intelligent man found that many of his solutions about the perplexities of nature either did not lead him to control his environment or proved to be wrong after direct and more complete experience with them. He found that the notion "seeing is believing" could not always be relied upon. He also learned that it was useful to attempt to systematize his observations and find some rational explanation for the events about him. Early man proposed supernatural causes for most of the events he observed. Modern science did not develop until men abandoned supernaturalism and came to depend primarily on the observation of nature to provide the answers.

Aristotle was one of the earliest thinkers to use empirical observation. He was both a philosopher and a scientist. Plato and Socrates after him were both primarily rationalists. The earliest fundamental difference between philosophy and science lay in the manner in which systematic laws were developed. Philosophy used mainly rational methods; science demanded observation. This is, of course, a matter of emphasis, since the manner in which we deal with our raw observation in science depends on systems of logic which are rational in nature. In psychology we have frequently forgotten the large philosophic component in the scientific method. In our anxiety to be scientific we have tended to disown philosophy as our parent discipline.

The Middle Ages continued in the rationalistic and supernatural tradition of the ancients, and little advance in knowledge occurred. It was Francis Bacon in 1620 who was most insistent in calling for a new approach to knowing. In a work called *Novum organum*, Bacon led the way in reviving empiricism. Obtaining knowledge, for Bacon, required that we rid our minds of prejudice and preconceived ideas, which he called "idols," and observe nature itself.

Observation, then, is the basic unit of science. But observation by itself is scarcely enough. What do we observe? The human organism is exceedingly fallible with respect to its perceptions. By way of illustration, in 1941 during the Second World War a newspaper in London dressed a man in the uniform of a German officer without cap, badge, belt, and insignia of rank. He walked through the main London streets in broad daylight. Despite his dress as a military enemy he attracted no attention among Londoners.

An excellent illustration of the inadequacies of our observation is an experiment conducted at the Union Club in Boston in 1910.[1] George R. Crocker had arranged a brief scene before a retired Supreme Court Justice, a civil engineer, 7 businessmen, and 11 lawyers. An investor A entered the office of a stockbroker B and transacted some business. B, repeating the order, but incorrectly, wrote it down. A, during the exchange, laid a black pocketbook on the white tablecloth before the broker, in full view of the onlookers. A third man C came in, asked a casual question of the broker, and dropped his handkerchief on the pocketbook. Picking up both the handkerchief and the

[1] Illustrations from Larrabee (1945).

pocketbook, he left. Upon leaving, A collided with a fourth man D on his way out. A few moments later A returned saying he had lost his pocketbook.

In the written reports of the incident by the witnesses, none of them described correctly the two main occurrences they witnessed, the incorrect repetition of the order by B and the stealing of the pocketbook. On the basis of their observations, the police would have arrested D as the thief, instead of the real culprit, C. The witnesses were present during the same events, and yet conclusions which were seriously in error resulted from their observations.

We cannot always be certain that the apparent relationships we observe are the important ones in the events we are attempting to understand. For example, the story is told about a man who, without training, decided to try practicing medicine.[1] His first patient was a blacksmith who appeared to have typhoid fever. Upon the request of the patient, and believing that the man might as well die happily, the amateur doctor allowed him to eat some pork and beans. Following this the patient recovered, and the "doctor" noted in his accounts: "Prescribed pork and beans for typhoid fever." A while later a shoemaker appeared to come down with the same malady, whereupon the quack doctor fed him a dish of pork and beans. When the new patient died, the observing "doctor" wrote in his notebook. "Pork and beans good for blacksmiths with typhoid fever but not for shoemakers."

We have suggested that observations may be exceedingly inaccurate and may result in false conclusions about the nature of events. Certain conditions are especially likely to lead to observational errors, and it is important for the scientist to be alert to these conditions so that he may improve the accuracy of his observations and the validity of his conclusions.

The field of clinical psychology is particularly prone to observational error because of the complexity of the events which must be observed. It is not always clear to the diagnostician what aspects of the person's behavior to take note of. The interpretation of what he sees is an even more difficult task. As the events to be observed become more complex and the nature of the items to be evaluated becomes more ambiguous, the disagreement between the observers of the same event is likely to increase. This is one of the factors which account for the failure of the group of observers selected by George Crocker (described earlier in this chapter) to identify correctly the thief who stole the pocketbook. The observers, all highly intelligent men, did not really know what aspects of the event they should have attended to. This sort of principle is often used by magicians who practice sleight of hand. The audience's attention is diverted to irrelevant movements so that the important action is not noticed.

In addition to the vagueness or ambiguity of the events to be observed, the training of the observer is an important factor in accurate observation. These

[1] *Ibid.*

two factors are interrelated since the trained observer knows better than the novice what things to look for.

One of the most important factors in the progress of any science is the development of appropriate measuring devices which aid in the production of precise observation. Often certain observations cannot be made at all without a specific observational tool. The most obvious examples of this are the microscope and the telescope, both of which added tremendously to the range of our visual perception of the biological and physical world. The list of such tools is extensive. They serve the function of making up, in part, for the physical limitations of the human perceptual system. However, human perception is still limited, and fluctuations of attention and errors of perception are still possible in the reading of instruments and in the use of mechanical and electrical recording equipment. All instruments are subject to some error, and the improper design of such equipment is often a major factor in producing errors of measurement.

Moreover, however carefully we design our measuring apparatus, it is the human being that must record and evaluate the data. Particularly in the complicated observations of the biological and social sciences, the accuracy of the observer's recording or interpretation is subject to disruption by human emotions and by strong personal biases. This is one of the most difficult sources of observational error to eliminate. The tendency to observe in accordance with one's wishes and fears has been known to philosophers, scientists, and writers for centuries. The term "autism" has sometimes been used to refer to this inner determination of perceptions. Jung (1916) and others such as Varendonck (1921) and Murphy (1947) have discussed autism in considerable detail. With the recent interest in the manner in which the individual's needs are related to his perception of need-related objects, the notion of autistic thinking and perception has become even more firmly established among psychological concepts.

A large number of experiments have been performed which suggest the operation of needs on perceptual behavior, memory, and judgment.[1] It is possible to unintentionally misread a dial as a result of strong desires to have data come out in a particular way. It is even easier to see in an event or observation confirmation of one's theoretical position or personal wishes. This is a major source of error in any science. It is one of the reasons why repeatability of observations is such an important dictum in scientific investigation. Innacurate results are eventually discovered in subsequent research.

The tendency to make observational errors is not the only pitfall in our effort to acquire knowledge through observation. Another scientific problem related to the process of observing arises when we attempt to give

[1] A few examples of this type of research are those of Asch (1940), Sherif (1935), Seeleman (1940), Postman, Bruner, and McGinnies (1948), and Lazarus, Eriksen, and Fonda (1951). See Chap. 8.

names to the events we perceive and to communicate them to others. Our language is frequently extremely ambiguous. The ideas which we may try to communicate may mean different things to others than they were intended to mean or, indeed, mean nothing at all.

There are countless numbers of humorous and tragic instances in which people have become involved in semantic confusions. Students at Teachers College, Columbia University, were easily able to locate many common words with multiple meanings. They found 15 meanings for the word *game,* 30 for *grain,* 25 for *failing,* 28 for *design,* and 34 for *account.* A student once submitted this hypothesis for a research project: "Good adjustment is positively related to high moral character." He became confused when he was asked what he meant by good adjustment. When he gave a verbose definition which clothed the ambiguity of the expression, his instructors were no nearer to understanding what the student really meant than before. In all probability neither was the student. He might profitably have asked himself, "How do I intend to define what I have called moral character?"

NUMERICAL SCALING AND THE LOGICAL ANALYSIS OF DATA

A discussion of the methodology of science must give recognition, even if only briefly, to the problems of measurement which are related to numerical scaling. Whenever we measure something, we are assigning numerals (numbers) to the empirical events which are being observed. We can use numerals to describe objects and events in the real world if the properties of the numerical scale which is thereby produced are parallel (isomorphic) to the properties of the events which the scale is depicting. A special problem frequently arises when the scale does not have the properties of the empirical operations and therefore cannot be used in certain mathematical ways which we would like.

For example, in some particular psychological experiment we might wish to measure the degree of neuroticism of a group of patients. In order to assign each patient some numerical value which can be used to compare him with other patients, the ratings of clinical psychologists or psychiatrists may be employed. As in the case of many experiments of this type, a five-point scale may be established from, say, normal at one end to extremely neurotic at the other. To illustrate our point about scales, let us consider the ratings made by one clinician for two different patients. Analysis of these data indicates that patient A was rated four on the neuroticism scale while patient B received a value of two.

At this point in the treatment of the ratings it might have helped us to be able to say that patient A is twice as neurotic as patient B. In fact, if the treatment of the group data involves obtaining an average value of neu-

roticism for all the patients which might then be compared with an average value for another group, the arithmetical process of getting the average requires the assumption that a rating of four really means twice as much neuroticism as a rating of two.

But it is not possible to say that patient A is twice as neurotic as patient B because we have no information about the psychological distance between the ratings of two and four. If the average rating for the group turned out to be three and one-half, for example, this number would mean little from a psychological point of view. The precision of measurement which is implied by the decimal point is only illusory because the psychological measurement has been very unprecise. In our hypothetical experiment we have constructed what is called an "ordinal" scale and have used it as though it had the properties of an "interval" scale. The properties of the empirical ratings were not really isomorphic to the properties of an interval scale. It was therefore inappropriate to treat the measures in this way. The reader will have occasion to come upon this point again when he reads the chapter on the self-report techniques of personality measurement. There the measurement of attitudes is discussed. In this work Thurstone has employed a method of converting an ordinal scale into an interval scale by making certain assumptions about the distribution of attitudes and by attempting to obtain equal psychological intervals between the different points on the attitude scale.

Implicit in the discussion so far is the fact that there are different kinds of numerical scales and that the mathematical treatment of them depends upon the properties of the empirical events which these scales are intended to represent. Actually there are four kinds of scales, the *nominal, ordinal, interval,* and *ratio* scales. We shall not take the time to discuss the properties of each except to give a few examples. They are listed in the order of greater flexibility of mathematical treatment. The nominal scale is the most primitive. The numbers which are used in it do not represent amount at all but are used as labels. Letters could be used equally well. An example of such a scale might consist of the numbering (identifying the members of a group) of players on a baseball team.

In the case of the ordinal scale, the numbers which are assigned represent simply a determination of greater or less than. The ratings of neuroticism mentioned above fall into this category. Four means greater than three, three means greater than two, etc., but the extent to which they are greater is not specified. These numbers cannot be averaged, as we have pointed out, unless the psychological distance between each of the ratings of neuroticism is, or can be assumed to be, equal. In other words, if the empirical data allow only the construction of an ordinal scale, then the numbers do not mean what we ordinarily think they do. Two is not twice one.

The problem of scaling is a most important one to psychology because an

ultimate aim of the psychological science is greater precision of measurement which requires more accurate quantification of the variables which determine human behavior. It is clear that the majority of our observations are not yet ready for the precise quantification which is implied in the interval and ratio scales. But one immediate aim of psychological investigation must be the conversion of our concepts into more quantitative form. This demands an understanding of the requirements and limitations of the different kinds of numerical scales.

Perhaps the most important reason why the student of psychology should become familiar with the characteristics of scales is that he is continually using them, and in many instances, incorrectly. The researcher who is using a nominal scale as an interval scale (the most common scaling error in psychology) cannot properly evaluate his data unless he is aware of this fact and its implications.

While we cannot undertake a complete analysis of scaling methods here, we believe that at least the statement of the problem is necessary. One of the most useful discussions of this topic may be found in Stevens (1951). The student is urged to explore the issue further.

We have said that one of the tasks of the scientist is to systematize or give some order to the events he observes. He does so by assigning numerals to the events he observes in order to describe their relationships in some systematic and meaningful way. In other words, he substitutes one of the numerical scales to represent the empirical relationships, and he does this in accordance with certain logical rules. These rules, or methods of logical analysis of data, have to do with the nature of the scale which can be used to parallel, in representation, the empirical data. The scales must have the same numerical characteristics as the events to be described.

Another way of saying this is that the observations of the biological and physical world must be classified in some meaningful way. The most primitive form of classification, and in many ways the first step in the accumulation of knowledge, involves the use of a nominal scale in which events are simply grouped into nonquantitative classes. This usually can be done because we find common elements among many different events. Grouping events into one class in accordance with these common elements represents a first attempt at systematizing the many discrete facts. The early classifications are often superficial in nature and require alterations as new observations are made. For example, the whale, now classified as a mammal, was once thought of as a fish.

The kinds of primitive (using nominal scales) classification systems which may be found in science are numerous. In botany we find Linnaeus's classification of plants. In physics substances were classified into solids, liquids, and gases. The periodic table in chemistry represents the classification of elements at a more sophisticated level because it has been possible to assign

numerals to the various elements which represent their relationship to each other in terms of atomic weight.

In psychology personality has been classified in accordance with many systems. For example, in 400 B.C. Hippocrates classified temperament into four types—sanguine, melancholic, choleric, and phlegmatic. Jung in 1923 introduced the well-known dichotomous classification of extroversion-introversion. Kretschmer (1926) used four categories to correspond to types of temperament. He described the asthenic, athletic, pyknic, and dysplastic body builds. Rorschach (1932) has described the coarctated and dilated types of personalities by means of examining patients' response patterns on the Rorschach test. Kraepelin (1906) proposed a system of classification of mental diseases in terms of symptomatology. This system (somewhat modified) [1] was adopted in 1934 by the American Psychiatric Association.

At a somewhat more sophisticated level, classification may be made in terms of the observation of *genetic sequences* in events or in terms of *comparisons of an event under different conditions.* In the former case it is often possible to demonstrate developmental sequences or evolutionary stages in seemingly independent events. Instances of the establishment of such relationships in biology and psychology are frequent. One of the classic examples of the use of this sort of logical method is a study of Coghill (1929), who observed in detail the reflex movements of the amblystoma, a tadpole stage of a type of salamander. Coghill examined the development of the response pattern of this organism to local stimulation. His observations suggested that the sequence of maturation was always from generalized, diffuse motor behavior to the specific, coordinated movements later seen in swimming. Hooker (1943) observed the same kind of reflex development in humans by the examination of the fetuses resulting from Caesarean operations during various stages of development. These stages in both Coghill's and Hooker's studies are related as parts of a common over-all developmental process. The various stages were roughly classified in terms of the degree of specificity shown in the development of these organisms. Since the judgment involved was really "more than," the method of classification followed the logic of the ordinal scale which we have noted earlier in this section. While still rather primitive, this kind of classification (by an ordinal scale) represents an advance in quantification over the nominal kind of classification. Even more precise quantification of this genetic sequence would be possible.

We need not look far to find genetic sequences which are observed in the field of personality and clinical psychology. The onset of speech or grasping (or for that matter many kinds of developments) in human infants follows fairly routinized steps. The psychosexual development of the individual

[1] Modification of the Kraepelin scheme may be found in Cheney, C. (1934).

postulated by the Freudians represents an invariant sequence of development through oral, anal, and genital phases. It has also been possible to concentrate on observing the stages in learning a maze in which errors are gradually eliminated. If we concentrate on the sequence of responses to the Rorschach ink blots and observe that they are consistent for an individual, we are classifying in accordance with a genetic relationship. One subject may first give a few responses using the entire blot, then mark off major sections, and finally center attention upon the tiny details in the card. Another subject reverses this sequence. In both instances the observer notes an evolutionary relationship from whole to large detail to tiny detail, or from tiny detail to large detail to whole responses. He may then classify these relationships in accordance with the kinds of numerals which may be assigned to each stage in the sequence—in other words, in accordance with the kind of numerical scale which is appropriate to the empirical observations. By employing such a logical analysis, our data are organized for more sophisticated examination, and we are helped to understand one event in terms of other events which precede it or follow it in a series.

Just as events may be classified in accordance with genetic sequences, they may also be classed according to their characteristics under different conditions. Similarities and differences among the characteristics of the phenomenon under these conditions may be noted and quantified or scaled. This is the logical principle or guide which is used in the comparison of the characteristics of various types of organisms (viz., people versus apes, rats versus people, etc.).

The Kellogg study (1933) of the behavior of the ape and the child at comparable ages illustrates this kind of analysis. The measurement of the performance of a psychiatric patient who is in remission (has been discharged from the hospital or has recovered to a large degree) on the Wechsler-Bellevue Intelligence Test with the record obtained from that patient while he was in the acute phase of the disorder represents this kind of logical analysis. The same event, in this case the test pattern, is being observed in two situations. Differences in the pattern (qualitative or quantitative) may then be related to the conditions under which they are observed to occur provided other relevant variables such as the effects of test repetition (see the principle of control) can be ruled out.

Classification by means of the comparative method of logical analysis is continually being employed by clinicians to discover differences in test performance between normal people and those with various kinds of mental disorders. The types of scales involved in the great majority of this kind of diagnostic work are nominal and ordinal. Most of the classification systems in clinical psychology are still in need of revision and are not readily described in precise quantitative terms. Added sophistication about the behavior disorders and the nature and development of personality implies

a higher degree of quantification. The biological and social sciences are behind the physical sciences along these lines because of the enormous complexity of these former kinds of events.

If we make many observations over as large and varied a field as possible, we will note many concurrences of events in a genetic or comparative sense. These concurrences may be tabulated, further classified, summarized, and evaluated by statistical techniques. It should be noted, however, that our conclusions about these relationships must be critically evaluated, since many of them are likely to be spurious. For example, we might have observed that there was a correlation between the importation of apples into this country and the number of cases of cancer reported by years. Such a relationship makes little sense to us and could readily be a chance occurrence which will never again be observed. We might check this possibility by statistical analysis of probability. On the other hand, the relationship could have been the result of some third variable common to apple eating and cancer. Such observations, if they interest us or appear fruitful, must be analyzed and checked carefully.

Drawing conclusions from many of the relationships we are able to observe involves a number of serious dangers. As shall be seen in later sections, we may have made errors in sampling. Moreover, we are often not able to make our observations under varied circumstances and, as a result, may be measuring the effect of conditions which are entirely irrelevant to the relationship we have established. We often forget that we are really describing a relationship rather than explaining it. Because two variables occur concurrently does not imply that one causes the other. In simple language, day always follows night; hence they are sequentially related. But who would suggest that one caused the other?

ASSUMPTIONS IN SCIENCE: SCIENTIFIC THEORY AND FACT

If he had accepted the assumption that there is some relationship between eating pork and beans, a man's occupation, and the course of typhoid fever, then the fake doctor (cited earlier in this chapter) who tried to successively eliminate the wrong occupations could expect to wind up with a reasonably successful therapy for typhoid fever some day. Assumptions of some sort underlie the conclusions we draw from any of our observations. The value of a conclusion in even a well-controlled research depends upon the correctness of the underlying assumptions. Frequently these assumptions are implicit or unrecognized. Sometimes the assumptions are general to the whole of science or to the techniques of an entire scientific discipline. These assumptions might be called the "postulates" of a science.

If some of the implicit working assumptions or postulates of science in general were pointed out to us, we would immediately recognize them. We

assume, for example, that what happens in nature is in accordance with general laws. As scientists it is necessary to assume that these laws are discoverable by human beings and that they are simpler than the phenomena we are observing. While the scientist does not usually go around questioning or worrying about the validity of these postulates, it is important to recognize that our attempts to systematize the facts about human behavior would be inappropriate if any of these above assumptions turned out to be false.

It is possible to recognize three kinds of statements that are made about the biological and physical world in which we live. One of these classes of statements is not dealt with by scientists. No attempt is usually made to check them empirically. They depend entirely on faith. These have been called "noncognitive" statements. An example of one might be, "God is omnipotent." There are many such noncognitive statements which we encounter all the time. But as scientists we do not ask whether they are true or false.

The second class has been called "cognitive" statements. These statements represent the theoretical concepts of any science which are devised in order to make the empirical events of the world understandable. They are postulates which, to be useful, must be internally consistent and must not contradict what we intuitively believe is true. All our theories about human behavior fall into this category.

Finally, the third kind of statements that can be identified may be called the "scientific" statements. These are the empirical facts and hypotheses of any scientific discipline. They consist of the directly observable relationships between events which we find in the world. The distinction between cognitive statements and scientific statements lies in the fact that the former are not directly testable and have to do with imaginary constructs (like electricity in physics or the ego in psychoanalysis) while the latter always involve operations (adding acid to a metal, human responses, etc.) which can be directly described.

It is these two classes of statements about the world that we are concerned with in science, the cognitive statement and the scientific statement. The layman, and sometimes the scientist, is likely to confuse the two in his everyday thinking. He is apt to mistakenly believe that the cognitive statement is a fact rather than an unproved statement or postulate which he devises in order to make empirical events more meaningful.

In general, as scientists, we observe many events which we should like to account for. In the case of psychology, all that is ever directly observed is behavior, that is, the actions of humans and animals. We soon discover, however, that the simple compilation of scientific facts about behavior does not allow us to explain it. We need some kind of principle or principles to account for the almost infinite number of specific relationships we are able to observe. The next step is usually to derive some kind of theoretical state-

ment which brings order to the chaotic facts and enables us to account for as many of them as possible. A system of self-consistent cognitive statements or postulates is produced which makes it possible to account for the empirical facts. But these cognitive statements cannot be tested directly since they are apt to consist of imagined entities or processes. In order to obtain evidence about their validity, it is necessary for us to deduce some consequences from the cognitive statements which are stated in such a way that they can be directly experimented upon. In psychology this means that the empirical relationship which is used to test a theory is stated in terms of human or animal behavior which can be measured in some direct way. This process of testing theory against empirical or operational events has been called "modelmaking." The empirical relationship which is tested is the model for the theoretical statement (construct) which helps us account for the facts. Let us illustrate the process of modelmaking in psychology.

Psychologists for a long time have observed cases of physical symptoms in people who have had no signs of organic injury or disease. In order to account for this observation the existence of a process called "conversion hysteria" was postulated in which some individuals were thought to respond to emotional problems by developing a physical symptom. This symptom served the purpose of disguising for the patient the true nature of the problem. The patient was said to have repressed the traumatic events and to have "converted" the dammed-off energy into a physical symptom.

It should be clear to the reader that all that can be observed directly in patients with conversion hysteria is the physical symptom for which the patient has come for medical assistance. Any explanation of this symptom in terms of some psychological process can scarcely be tested directly. One cannot see the defense process or measure it. The concept of defense mechanism is an imaginary (hypothetical) construct which is introduced to make the behavior which we have observed meaningful. For such an explanation to be proved reasonable it is first necessary to demonstrate that the hysterical patient's symptoms are in some way different or distinguishable from the symptoms of the patient with real organic pathology and to set up empirical models which are appropriate to the cognitive statement of defense mechanism which must be tested. The real question in any of this activity of modelmaking is whether the empirical model is appropriate or is a good analogy to the construct from which it is derived.

The work of Hilgard and Wendt (1933) and Cohen, Hilgard, and Wendt (1933) illustrates the manner in which a hypothetical construct may be handled by the use of an empirical model. It was found possible to show that a hysterical patient (who reported that he was blind in part of his visual field) could actually perceive light sensations in the reportedly blind areas. The authors (Cohen, Hilgard, and Wendt, 1933) demonstrated with this patient that a light which preceded a sudden sound altered the patient's

normal eye-wink reflex to sound whether the light was presented to the blind or unimpaired visual area. This phenomenon could not be produced in the blind part of the visual field of a patient who was known to have had hemianopsia (genuine organic blindness in part of the visual field) with a history of organic injury (Hilgard and Wendt, 1933). Moreover, it was also shown that the hysterically blind part of the visual field could be conditioned to give responses to a light stimulus. It was possible to conclude from these experiments that, in the hysterical patient, blindness was not the result of an organic defect and should be accounted for by some psychological mechanism (hypothetical) which could not be directly observed. These experiments represent empirical models which serve as support for the notion that certain psychological defense mechanisms are operating in hysterical conditions.

Psychologists, as we have said, deal with two kinds of statements, scientific (empirical) statements or relationships and cognitive statements (theory). Their research work is therefore divided into two kinds of activities. In the first place they develop theories or concepts which are designed to organize the empirical facts and make human behavior understandable. Secondly, they must devise appropriate models for their concepts so that the theoretical statements can be evaluated and test these models by observation and experimentation. Much of their work is concerned with the development of tools of measurement to make such experimentation possible.

One of the frequent errors that the psychologist makes is to assume that his cognitive statements are adequate and need no testing. Psychoanalytic theory is a good example of an internally consistent and valuable system of cognitive statements about human behavior which is not directly testable. The concepts of ego, id, superego, and defense mechanism (repression, sublimation, etc.) are all hypothetical constructs for which empirical models must be derived so that the theoretical statements can be tested by experimentation. The important question is often a matter of whether the model is a good one for the concept. The student is referred to a chapter by Sears (1944) in which a description is given of some of the research with psychoanalytic models. The chief criticism of this work has been that the empirical models were poor ones. In psychological research there tends to be less disagreement over the scientific statements which are made than over the interpretation of the data in terms of theoretical concepts. We do not argue about whether the patient said thus and so but about what this really means.

One of the reasons that an understanding of modelmaking is so important to the clinical psychologist is that the nature of human behavior is so complex that the clinician and personologist are apt to make very great use of constructs which need to be evaluated. It is a very simple thing to throw in a construct every time one finds some event which cannot readily be explained. Because these constructs give him a feeling of well-being the

clinician or personality theorist may lose sight of the fact that they are really only concepts which he himself has invented. His task is to produce the most parsimonious system of cognitive statements which are checked constantly against his experience and experimental models.

Even when the psychologist believes he is dealing with a strictly empirical relationship, he is often making some assumptions about the nature of these relationships. For example, the clinician may observe that the hysterical patient (defined operationally in terms of certain behavior patterns) shows a particular pattern of performance on the Wechsler-Bellevue Intelligence Test. While this is an empirical statement, the more inquisitive and competent clinician will generally ask what this relationship means. As a matter of fact, he is likely to automatically interpret this empirical relationship as showing that the hysterical patient is employing, in the main, a particular kind of psychological defense mechanism. As soon as he draws this conclusion from his data, he should recognize that he has stepped onto the level of cognitive statements. It is essential that the clinical psychologist knows what this actually implies.

We have only touched upon the problems of modelmaking. There has been a great deal of discussion about this topic among scientists in general. More recently the problems surrounding the use of hypothetical constructs, operational thinking, and modelmaking have received considerable attention among psychologists. The student might be referred to the *Psychological Review,* September, 1945, and to the following other sources for discussions of some of these issues: Cantril *et al.*, 1949; Tolman, 1936, 1938; Spence, 1944, 1948; Hull, 1943; Rosenblueth and Wiener, 1945; MacCorquodale and Meehl, 1948; and Marx, 1951.

THE PRINCIPLES OF EXPERIMENTATION

We have said that reliance upon empirical observation differentiates science from nonscience. It is not always possible or practical to sit around and wait for some event to happen. When a scientist wishes to observe something at the time and place and under the conditions which are most favorable for him, he may perform an experiment. He will make the event happen when he is prepared to make accurate observations. He attempts to control the conditions so that the experiment may be repeated and the results duplicated. He manipulates his variables in such a way that he can conclude properly that some variable or variables are the causal conditions of some effect.

It is important to realize that experiments do not prove or disprove the cognitive statements (theory) of any science. These experiments help to establish or refute empirical relationships. These empirical relationships may or may not be appropriate models for our theoretical constructs. Ordinarily

the scientist attempts to set up a good model. In establishing the model he has already predicted what will happen as a consequence of his theory. This prediction is the hypothesis for the experiment that he will perform. The experiment is an attempt to test the hypothesis, and if the model he has established is a good one, he may reject the cognitive statement from which it was derived if the data are negative. Sometimes there is disagreement over whether the model is appropriate. One man interprets the obtained lack of empirical relationship as evidence against the theoretical structure. Another may reject the experiment as either poorly designed or an inappropriate model. There is nothing absolute about this game of theory and model building.

The areas in which it is extremely difficult to perform experiments are fields in which a large number of variables interact in such a way that they cannot be readily isolated or their interaction measured. This is particularly the case in the biological and social sciences which include the clinical psychology field. Where controlled and impartial observations are difficult, methods of unscientific thinking are likely to grow. We may fall into habits of tenacity and consider something to be true because we have always believed it in the past. We may depend on authority and blindly accept the dogmas of experts. We may employ the method of intuition in the face of contrary evidence; and because we feel that it ought to be so, we maintain that it is.

We are now prepared to examine the rules of logic by which, with some confidence, we may arrive at systematic conclusions about the empirical relationships which we wish to test by experimentation. These are the basic logical systems for testing empirical hypotheses. These principles do not tell us how to discover new facts or devise new cognitive statements, but they are intended as principles of reasoning to prove or disprove (although this is philosophically impossible) the existence of relationships that we believe exist. We always begin with a question for which we have some suggested answer, the hypothesis, and go on to test this hypothesis experimentally.

Basic Problems. Before we can fully appreciate the fundamental logic of experimentation, we must understand some of the basic methodological problems that confront the experimenter in his attempts to test empirical hypotheses. We shall discuss these problems under the headings of The Principle of Control, Sampling and Generality, and Causal Analysis.

The Principle of Control. The participants of any science are continuously striving to establish empirical relationships between the events that are observed in the biological or physical world. One way of doing this is to design an experiment in which we can test whether some observed event is related to or affected by some other event. However, in order to conclude that one factor (independent variable) is related to another (dependent

variable), we must be confident that other irrelevant factors in the situation are not operating. In order to make sure that other factors are not responsible for the observed effect, we must control the operation of these other irrelevant variables either by measurement or by experimentally preventing them from influencing the situation we are studying. This principle of control is one of the cardinal concepts of science. Without its proper application we can never draw valid conclusions about the empirical relationships that can be established in any particular field of investigation.

For example, one of the earliest problems in the field of abnormal psychology had to do with the factors responsible for mental illness. In the early 1920's Henry A. Cotton (1921, 1922) was proposing a theory which maintained that focal infections in the human organism were the primary conditions which accounted for mental illness. Cotton proposed that the removal of such infections in mental patients would eliminate the disturbance. He presented a large number of uncontrolled observations indicating that patients who were treated in this manner recovered.

The principle of control and its importance is nicely illustrated by one of the earliest known control studies in the field of mental diseases. In 1922 Kopeloff and Cheney (also Kopeloff and Kirby, 1923) reported on an experiment which was performed to test Cotton's theory of focal infection. Fifty-eight mental patients were treated by the removal of foci of infection such as infected teeth and tonsils. A comparable group of 62 patients were used as controls from whom such foci of infection were not removed. Kopeloff and Cheney found that the treated patients showed no more mental benefit from the removal of the infected tissues than the untreated ones. The authors concluded that focal infections could not be considered to be a major factor in functional mental illness.

In designing their study with the use of a control group, Kopeloff and Cheney were able to test whether the removal of focal infections made any difference in the recovery rate of patients. Without the control group (non-treated group) nothing could have been concluded because of the fact that some patients would have improved regardless of the treatment employed. Although the controversy over Cotton's theory continued for some time after Kopeloff and Cheney's crucial study, the theory of focal infection is today a dead issue. It is no longer believed that focal infection is responsible for the functional mental illnesses. However, the problem which was addressed by Kopeloff and Cheney bears a striking resemblance to a very current issue—the significance of the various shock and surgical therapies in the treatment of mental diseases. In many of the studies of the effect of these forms of treatment, there has been a failure to control other important variables which might account for the results. Some of the researchers have missed the point that a certain percentage of patients get well without any treatment at all.

To assess the value of any therapy, comparisons must therefore be made with a nontreated group.

In a recent study of the effects of topectomies (the surgical removal of parts of the frontal lobe of the brain) on recovery from schizophrenia,[1] the use of a control group which was treated nearly identically to the operated group of patients, except for the surgery, provided evidence that just as many nonoperated patients recovered as those receiving the surgical treatment. Zubin (1949) has concluded from these data that there is no justification in the use of topectomy as a treatment of schizophrenics that have had a lengthy hospitalization. While the results of this study are still controversial, failure to control variables other than the one which is being studied is likely to result in misleading conclusions. The principle of control is basic to scientific thinking, and its application is one of the most important problems in any scientific investigation.

Sampling and Generality. If we attempted to answer the question, "What is the basal metabolic rate of all 30-year-old men?" we would have a difficult time. Assuming we had the techniques to measure basal metabolic rate, we would be faced with the overwhelming task of applying it to all men of 30 years of age. Certainly to undertake this, even if it were a most important question, would be silly. We can all recognize at once the impossibility of the task. Without many millions of examiners it would be a never-ending job.

Even the attempt to answer a much simpler question gives us reason for concern. Let us decide to be satisfied with the basal metabolism of one 30-year-old man, Mr. X. We now obtain a measurement of Mr. X's BMR. But Mr. X's BMR fluctuates daily. Then if we tested him twice, we would obtain two different measures. How many times will it be necessary to test Mr. X until we achieve a measure in which we can have confidence? In other words, how large a sample of Mr. X's varying BMR's will it take to assure us that the average measure we have is Mr. X's true basal metabolic rate? The answer to this question would certainly depend on a number of factors—how variable is his BMR, how certain we want to be, etc. If we took a sample of 10 BMR's, we might get a false idea. There is also the question of our measuring device which is bound to be somewhat variable and which makes any generalization about Mr. X's true BMR even more hazardous.

If we wanted to be extremely cautious, all we could say after any single measurement is that on this particular day, using this particular measuring instrument, under these particular conditions, Mr. X's BMR was such and so. But we are certainly not interested in so limited a piece of information. We may want at least a close approximation to Mr. X's BMR generally. We will therefore have to generalize from a sample of observations. If we want

[1] *Selective partial ablation of the frontal cortex.* Columbia-Greystone Associates. New York: Hoeber, 1949.

to have some idea of the BMR's of men of 30 years of age, the problem is enlarged, and we are again forced to make a generalization from a limited number of measures which we call a sample.

Remember our frontiersman who was playing doctor and trying to make a generalization about typhoid fever? Not only was he trying to get a principle out of a spurious relationship, but he was generalizing from a sample of one. His second patient died. We might wonder how large a sample it would take for the "doctor" to abandon pork and beans as a curative agent.

When a scientist performs an experiment, he is interested in more than the limited results of his particular sample of cases. For the research to be of value, the conclusion that is drawn about the population of subjects in the experimental situation should also be applicable to repetitions of the experiment with other subjects. In other words, the scientist would like to be able to generalize beyond the limited set of data which he has collected. In particular, he must decide how confident he can be that the findings of his experiment did not simply occur by accident. He asks whether his findings are statistically significant.

A great deal has been written about the use of statistics in yielding measures of central tendency, variability, and correlation. One of the most important functions of statistical techniques for the scientist is to help answer the question of whether a particular finding is likely to have occurred by chance. There is little value in duplicating standard textbook material on tests of statistical significance. It is, however, extremely important for the student to understand the problem. It has only been in recent years that there has been widespread recognition of the need for some way of establishing the degree of confidence that can be placed in quantitative research findings.

It will be helpful to illustrate what might happen to an experimenter who fails to ask this question. Suppose a psychologist had the hypothesis that students who sat in the front of the classroom were brigher than those who chose the rear seats. He might enter any particular classroom at random and give intelligence tests to the students in the front and rear of the room. Sure enough, as he averages the scores he discovers that the IQ of the students in front is 10 points higher than those in the back. But the competent experimenter is unlikely to write a report of the experiment concluding that he had proved his supposition. He cannot draw such a conclusion until he has determined the probability that such a finding may be the result of chance. In other words, he must know what are the chances that such a distribution of scores would have happened in such an experiment even though the true difference between IQ's is zero. If the experimenter had gone to a number of comparable classrooms, he might have found that some of them showed the opposite pattern, that students sitting in front were actually more dull

than those in the rear. He must know how large a difference would have to be obtained with this particular number of cases in order to conclude that it was real. Experimental results must be rejected as likely to be chance findings unless statistical tests of significance reveal that the probabilities of the event occurring by chance are very small. This "level of confidence" or probability statement determines whether it is reasonable to generalize from the findings, provided the experiment has otherwise been performed with appropriate design and control. Such reasoning as this is implicit or explicit in all sophisticated modern research.

Causal Analysis. Frequently we make observations which confuse us a great deal. We try to make sense out of what we have perceived. Not infrequently we give these observations a name, and lacking anything better by way of explanation, we may succeed in impressing our colleagues by our erudition. For example, we may glibly state, "He's an obsessive-compulsive neurotic," as though we thoroughly understand the patient. Sometimes the use of a name or classification tag reassures us and we let the matter rest. For example, for a long time we have known that there were many kinds of foods that some people "couldn't eat." [1] We have observed also that there were organic and inorganic substances which produced irritations called asthma and hay fever. Assuming that all these reactions were basically similar, they were called "allergies." The irritants were termed "allergens," and people who were sensitive were said to be allergic to these substancess. We then say that allergy is the condition that causes a person to respond to this harmless substance in an allergic way. However, we have simply concealed under a descriptive label a confusing number of causative factors and symptoms. We have not explained what it means to be allergic and why some people are and others are not.

We have noted that it means very little, in reality, when we say that allergy causes a person to respond in some particular way. The question of causality is not a simple thing at all. Scientists can make a very good case for abandoning the idea of causality altogether because it often has fallacious implications. For example, instead of saying that the billiard cue and the muscular activity of the player *caused* the ball to move, we might describe the cue and muscular action as *conditions* of the movement. There are actually many "causes" for the ball's motion. The question is, "Which ones interest us?"

We are so accustomed to speaking of causes that an injunction against the use of the concept seems absurd. Yet the things we call the causes of events depend usually on our frame of reference or upon what satisfies us as a relevant explanation. Recognition of this has led to ideas such as multiple causation, immediate and ultimate cause, and levels of causality. The following news item is an example to illustrate what we have been getting at.

[1] Larrabee, *op. cit.*

INCOME TAX LEADS TO FIRE [1]

> Edward H. Reynolds, 46 years old, former assistant U.S. district attorney, worked at his law office in North Tarrytown all night making out his income tax return. At 5:45 A.M. he dozed, and his lighted cigarette fell on an overstuffed chair beside his desk. A few minutes later neighbors observed smoke curling from the office window. Firemen were called and found Mr. Reynolds overcome by smoke. He was taken to the Tarrytown Hospital, where physicians said this afternoon his condition was good. Damage to the office was estimated at $400.

Let us suppose that three men arrived upon the above scene, an interne from the Tarrytown Hospital, the chief of the Tarrytown Fire Department, and a reporter from the *New York Times.* All of them ascertained the primary fact: a man was unconscious, overcome by smoke from a fire in his office. Each, however, made his own analysis of the causes of the event in terms of his past experiences and future purposes, namely:

(*a*) *Interne, Tarrytown Hospital*

PURPOSE IN VIEW: Recovery of patient, and increased medical knowledge.

EFFECT TO BE EXPLAINED: Patient is unconscious, respiration irregular, pulse weak, etc.

FOCUS: Physiological disarrangement of functions.

CAUSES: Inhalation of smoke while in fatigue condition from all-night work, hunger, etc.

UNIFORMITIES USED: Medical knowledge of effect of inhalation of smoke, fatigue, etc., on adult beings. (Note that complications might require some knowledge of Mr. Reynolds's individual "life-history" in order to interpret this specific case.)

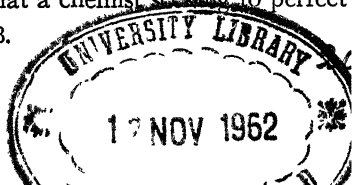
(*b*) *Chief, Tarrytown Fire Department*

PURPOSE IN VIEW: To establish cause of fire for legal and insurance purposes, and to prevent future fires.

EFFECT TO BE EXPLAINED: Danger to life and limb; $400 damage to property; and $25 expense to taxpayers.

FOCUS: Physical cause of combustion; and (more remote) physiological and psychological causes of dropped cigarette.

CAUSES: (1) Contact of lighted cigarette and inflammable materials of chair. (Note that a chemist seeking to perfect a noninflammable up-

[1] *Ibid.*, pp. 296–298.

holstery material might analyze this much further, even to subatomic level.) (2) Release of finger muscles by Mr. Reynolds while asleep.

UNIFORMITIES USED: (1) Laws of gravitation and combustion. (2) Psychological laws of sleep. (Note that account might have to be taken of Mr. Reynolds's individual life-history, habits, conditions, etc., in order to interpret his falling asleep on this particular occasion.)

(*c*) *Reporter, New York Times*

PURPOSE IN VIEW: To furnish information about current happening that will be interesting and useful to a wide group of potential readers.

EFFECT TO BE EXPLAINED: Event sufficiently exceptional to be newsworthy.

FOCUS: Social-cultural connection of circumstances of the fire and the interests of potential readers through a series of foci.

CAUSES: Possibility of remote linkage of minor blaze on March 4 with income-tax returns due March 15, namely, danger to life of prominent citizen due to fatigue due to overwork due to Mr. Reynolds's handling of his income-tax return problem. Implication: no income-tax requiring complex return, no fire; but no serious claim is made of "necessary" linkage of U.S. governmental policy and fire damage.

UNIFORMITIES USED: Many of those already mentioned, and loose generalizations concerning social suggestion, imitation, curiosity, habit, etc.

If someone asked the interne, "How did it happen?" his brief answer would probably be something like, "Smoke and fatigue." The fire chief's reply to the same question would no doubt be, "Carelessness"; while the reporter might explain that "The poor guy was up against one of those long and detailed income-tax returns . . . something ought to be done about things which take all night to figure out." Still different analyses of the incident would undoubtedly be made by an anti-cigarette leaguer ("Smoking habit is to blame"), by a coffee salesman ("A cup of our coffee would have kept him alert"), by a metal furniture salesman ("You see what happens to men who stick to old-style furniture"), and many others. Each one would differ in emphasis and interpretation according to his particular experience and interest. It is not a case of one causal analysis being correct, and all the rest incorrect. All of them may be justifiable, up to a point, for the purpose for which each is intended.

The analyses also differ greatly in the extent to which they view the Reynolds incident as typical of a certain kind of event rather than as standing alone. It is one thing for Mr. Reynolds to have "learned his lesson" from the misadventure; but it is quite another for the residents of Tarrytown, or physicians as a class, or fire chiefs, or readers of the *Times,* to have learned their lessons. For the prevention of future inci-

dents of the same sort, some of the analyses are more likely to be useful than others; yet all of them taken together would be needed for the fullest understanding of what happened and why.

We may find this same sort of situation in the explanations we try to make of observations of psychological events. Depending upon our frame of reference or the kinds of variables we have become accustomed to deal with, we can understand observed events on several levels of causation. If we are physiological psychologists, we may, among other things, look for some of the metabolic processes in schizophrenic patients because we are in the habit of dealing with the physiological level as an explanation of behavior. It is possible that, by analyzing the physiological variables, equations could some day be written describing all complex behavior. On the other hand, to thoroughly understand the event, every other level must eventually be understood as well. A comparable equation could presumably be written on a behavioral level of analysis. The ultimate answer of course involves all levels. Complete answers on any single level are not available with our present knowledge. As scientists we must have more than the knowledge of the lighted cigarette and the inflammable chair. A simple causal interpretation of our observation can be dangerous and is always incomplete.

Mill's Canons of Experimentation. The logical patterns for experimentation were originally set down by John Stuart Mill. Mill's canons, as they are often referred to, form the basic logical systems for the evaluation of experiments. They were attempts at establishing rules for testing causal relations. They are variations of the principle that, when all conditions are controlled, and one variable is found to change along with another, we can say that the variables are related in some way. The independent variable which is systematically altered by the experimenter, and the dependent variables on which the effects of this variation are observed, may change together, or exist together, and disappear together.

If we understand the basic reasoning patterns, we can identify them in any scientific experiment and note the strengths and weaknesses of the conclusions drawn from the data. When we master these forms of thinking, we sharpen our critical judgment and are in a better position to evaluate the scientific work of others and perhaps understand more fully the logical reasoning behind all experimental work.

Mill's canons should not be looked upon by the reader as experimental designs. Rather, they are logical principles which are at the root of any experimental approach that is found in science today. We are much more sophisticated in measurement and in experimental techniques than in Mill's day, and consequently it is now possible to design experiments in which several variables are operating at the same time (analysis of variance). In other words, we have learned to do several experiments at once, each following Mill's principles. Moreover, as we shall point out later, we know how

to control variables by statistical methods (analysis of co-variance) as well as experimentally. Instead of preventing an irrelevant variable from operating in the situation, we can measure its effects and account for its influence on the dependent variable statistically. Despite our procedural advances, we still depend upon the principle of a closed system of variables that allows us to assess the influence of some independent variable or variables as Mill recommended. While Mill thought of experiments in terms of single independent variables, the same logical principles still underlie our experimental reasoning even in multivariable designs. It will be useful, therefore, to examine these principles briefly.

The logical principles of experimentation which were recommended by Mill require that two things be established with regard to the proof of a causal relationship between two variables. It is necessary to show that the independent variable is a necessary and sufficient condition for the dependent variable. In other words, the maximum experimental support for a hypothesis would include the finding that whenever some independent variable is present the effect (dependent variable) occurs (this demonstrates that the independent variable is a sufficient condition for the effect) and that the effect never occurs without the presence of the causal variable (independent variable). This latter demonstration (that the independent variable is a necessary condition for the effect) is the more difficult one to achieve. For example, in medicine it is much easier to demonstrate that particular bacteria are usually present in some particular illness But this is not adequate evidence that they are responsible for the patient's diseased state. At this point it is known only that the presence of the bacteria is a sufficient condition for the disturbance. It is still necessary to show that the removal of the bacteria results in the loss of the symptoms which are ascribed to them.

We shall begin our description of Mill's principles by examining the two most precise of the logical methods, the principle of concomitant variations and the principle of difference. These rules of reasoning require that we deal in the most controlled fashion with the issues of sufficient and necessary conditions. As we shall see they allow for the negative condition, that is, in the absence of the critical variable, the effect is not observed. Then we shall discuss the principle of agreement which is the loosest of the approaches because it deals only with sufficient conditions. The joint principle will then be described and finally the principle of residues.

The Principle of Concomitant Variations. This is the most important quantitative rule in science. It says, simply, that if any event (the independent variable) is varied in some systematic way, all other conditions being held constant, and some other event changes systematically with it, then the two events are connected or related. The direction of change need not be the same for both variables but must at least be consistent. If both events change

together in the same direction, they are said to be directly related. If they vary in opposite directions, then they are said to be inversely related.

Sears and Sears (1940) did an interesting and simple experiment to investigate the relationship of degree of frustration to the latency of aggressive behavior which followed. They varied the time during feeding at which the nipple was removed from the mouth of a 6-month-old baby. The quickness with which crying began was directly related to the infant's unsatisfied hunger. When the bottle was removed early in feeding, crying followed almost instantaneously. The later it was removed, the longer was the latency of the aggressive response.

In their experiment Sears and Sears systematically varied the duration of feeding and measured the concomitant change in the time of the crying response. They were able to report that these two events were related because they varied together when all other relevant conditions remained essentially the same. The removal of the bottle was a necessary condition because crying depended upon it to occur. If the authors had chosen to obtain additional data, they could have shown the degree to which this was so. In concomitant variations emphasis is usually on the degree of any relationship. This degree is usually stated in the form of a correlation coefficient.

The process of the discovery of a relationship is often confused with the testing of hypotheses. For example, Wechsler (1944) noted that, as people grow older, their performance on certain intellectual tasks tends to grow poorer. There is an empirical relationship, therefore, between age (at the upper levels) and performance. It is not clear, however, whether this relationship reflects the influence of some other factor such as cerebral arteriosclerosis which is common in old age, changes in motivation of the elderly person, or a combination of these or other factors. Wechsler was not testing a hypothesis by the principle of concomitant variations but was making an observation by means of a correlation technique which corresponds to the quantitative procedures in concomitant variations. Having devised a correlational hypothesis through observation, he might then perform an experiment to test it further under more controlled conditions. Cognitive statements and models still need to be devised and explored to explain more fully this observed relationship.

Although it is the most precise method of reasoning and the prototype of all experimental procedures, concomitant variation is the most difficult to apply. There are pitfalls in the logic which must be understood. The correlations obtained can be misleading, particularly when the principle is used in complex, not easily controlled, situations such as in biological, social, personality, or clinical research. It was intended for the physical sciences. In the Sears and Sears experiment it is not possible to say absolutely that, during the variation of the hunger of the child, *all* other conditions were the same.

The infant was changing in at least certain respects. For one thing it was gaining experience. This is always the case in experiments with human subjects and reduces somewhat the level of confidence we can place in our conclusions and in the precision of our measurements. We must either simply assume that these uncontrolled factors are not relevant or do check experiments to ascertain to what extent they can be held responsible for affecting the results.

As we have pointed out before, the presence of concomitant variation (correlation) does not prove causal relationships. It is not always possible to identify which is cause and which is effect. A hidden third variable may be their common cause. One of the best illustrations of this is the experiment of Roethlisberger (1940) concerning the factors influencing worker output in Western Electric's Hawthorne Plant near Chicago.

Roethlisberger studied the relationship of quantity of illumination to worker efficiency. The workers were divided into two groups, one working under constant normal illumination (the control group) and the other working under varying lighting conditions. For the experimental group, the illumination was gradually varied from 24 to 46 and then to 76 foot-candles. The output in the experimental group rose steadily. Had no control group been used, it might have been concluded that work output and illumination were directly related. This is frequently what happens in research in which the subject serves as his own control. However, a comparable rise in output of the control group pointed to some third variable. When the test group's illumination was cut steadily to 10, then to 3 foot-candles, work output in both groups continued to increase. Not until the lighting conditions for the experimental group became equivalent to ordinary moonlight did the output of the experimental group begin to drop.

The investigators concluded that psychological factors related to morale and not directly connected with illumination kept the worker output increasing. The conclusion that might have been drawn if a single group had been used and the illumination progressively increased illustrates one of the dangers in the naïve and uncontrolled use of the principle of concomitant variations.

The Principle of Difference. The principle of difference is very much like concomitant variations except that, instead of variation along a series of quantitative steps, it is in terms of two differing categories such as presence or absence, high or low, or different qualitative states. The canon states that if, when an event is present, a certain dependent variable is also present, and under identical conditions, when the event is absent or different so is the dependable variable, then the independent and dependent variables are related.

Lazarus (1949) was interested in studying the influence of color on the performance of subjects on the Rorschach ink-blot test. In the test, five of

the ink blots are colored and five are black and white. It had previously been noted that some people gave a relatively poor performance on the chromatic blots. Poor quality of performance on the colored blots was interpreted as an emotional response (color shock) to the color in the ink blots.

Suspecting that the presence of the color in the ink blots might be relatively incidental to the performance of the subjects, Lazarus reproduced the colored Rorschach blots in black and white. All other characteristics of the blots were kept the same as the originals. Both sets were presented to subjects in the group method of administration. It was observed that performance on the black-and-white set was essentially the same as it was when color had been present. This was interpreted to mean that color was not related to the performance under consideration. When color was present, the pattern was still there. Color could not have been the basis of the response pattern, since the pattern appeared regardless of whether color was there or not. It was not a necessary condition for the "color shock."

An example of the use of the principle of difference in a nonexperimental fashion is a study by Dennis (1940). He was interested in determining whether restriction of activity in an infant inhibited its motor development. The question arose out of arguments over whether certain motor skills such as walking were learned or were the result of maturation. Dennis made a series of observations on the children among the Hopi Indians. Infants raised in the traditional Hopi fashion are bound to a stiff board from birth to about three months of age, preventing flexing of the legs, bringing the hands to the mouth, putting the feet in the air, or turning the body. The infant is released from this restriction for only about an hour daily. Because of changing cultural patterns many of the Hopi abandoned this practice. Selecting a group of infants raised under both conditions, Dennis compared the average age of walking and found them to be the same. It became clear that the restricted activity had no retarding effect on age of walking and, as a matter of fact, a number of other motor functions.

Had Dennis not gone to the Hopi civilization to obtain his research conditions, he might have made the events occur by means of an experiment. Had it been practical he could have selected two foundling groups and bound one of them for several months during early infancy. In this case doing an experiment was less practical and no more precise than making some controlled observations of the presence and absence of a condition in the natural setting. He used the principle of difference in an observational setting.

The assumptions and dangers of the principle of difference are essentially the same as in concomitant variations. In Lazarus's experiment differences must have existed in the subjects from the first to the second Rorschach administration, although they were done under identical physical conditions and at the same time of day. The subjects were 6 weeks older and had one experience with the test. The conclusions from the experiment are invalid if

the assumption should be proved false that the differences were slight or irrelevant to the outcome.

The principle of difference demands a high degree of control over all conditions in an experiment, a requirement that is difficult to meet in research in the biological and social sciences. When necessary compromises are made, our interpretations must be cautious. The level of confidence we can place in our conclusions must vary with the extent to which we have controlled other relevant factors. It may be of help to make a number of independent series of observations in cases where complete control is impossible. Often we must do an experiment which we recognize is poorly controlled merely because demanding such control would necessitate abandoning research on that topic altogether. Check experiments and replications become extremely important under these circumstances. In drawing conclusions we must never ignore the compromises we have made.

The Principle of Agreement. From the time that man began to reason systematically he searched for the causes of events, often by the unconscious use of the principle of agreement. Because it is the weakest of the logical principles, countless errors are continually being made with it. But it is the most frequent method found in the social and biological sciences. It is based on testing whether a variable is a sufficient condition for some effect (*e.g.*, that bacteria are present in certain forms of illness). We may state it as follows:

If two or more instances of the phenomenon under investigation have only one circumstance in common, the circumstance in which, alone, all the instances agree is related to the phenomenon.

Let us suppose now that we have observed a behavior pattern which we call "aggressive" behavior. We may discover that this behavior often appears to occur following an event which we have termed "frustration" We may set up a crude hypothesis that the two variables, frustration and aggression, are in some way related. Having this hypothesis we can now set up observational or experimental situations to determine whether, whenever we find aggressive behavior, we also observe a frustrating condition as the antecedent.

Miller and Stevenson (1936) and Hull (1934) interfered with eating in rats and found an increase in snapping and biting in the animals' behavior. Later, Sears and Sears (1940), previously cited, interrupted feeding in infants and observed angry crying as a consequence of the frustration. We may pile up examples of differing situations in which there is only one circumstance in common, a frustrating event, and from this evidence conclude that frustration and aggression are in some way related. No matter how different these events may be in other respects, they have an element in common, namely, frustration. Unless some unobserved factor is discovered to have been present in all our cases, we can conclude, tentatively, that aggressive behavior is preceded by frustration.

At best the canon of agreement is little more than a scouting device for comparing different instances of an effect to see whether a suspected factor is universally present as it should be if it is a cause or antecedent. We have not proved a causal relationship We have not been able to test, as we can, using the principle of difference, whether when frustration is not present aggressive behavior is also not present, in other words, that frustration is the necessary condition for aggressive behavior. This is difficult to do because we cannot measure or manipulate frustration well enough to produce both a positive and negative instance in which we have held all other variables constant in our experiment. Moreover, it is highly probable that there are other consequences of frustration such as regression, as Barker, Dembo, and Lewin (1941) have suggested. The use of the logical concept of agreement provides us, not with substantial proof, but with partial evidence encouraging us to push further or to look somewhere else if the independent variable is not a sufficient condition.

The pitfalls of the principle of agreement are many. Relevant circumstances may be overlooked and irrelevant ones noted We shall see that the joint principle, which requires us to observe negative as well as positive instances, helps us determine whether the variable is a necessary condition for the effect.

Another danger in the principle of agreement is that we may consider several consequences to be alike when they are not alike in basic ways. There is certainly something in common between all deadly poisons because they all cause death. We have, therefore, classified substances which are lethal as poisons. But their manner of producing death, that is, their effect upon the body, may be vastly different. As in the case of the primitive classification of data, superficial relationships are often selected as bases for establishing communality which may obscure the important ones. And as in the case of the principle of concomitant variations, both the antecedent and consequence may be the result of a more important fundamental factor.

The Joint Principle. Because the principle of agreement is relatively ineffective and because in research into personality two or more events differing in only one respect cannot easily be found, the joint principle is of great value. It has often been called the double method of agreement because it uses the positive examples of agreement as well as negative examples so that the necessary condition may be established. The positive instances include several events which have only the independent and dependent variables in common, and the negative instances consist of comparable events which have in common the absence of the independent and dependent variables.

An example of the reasoning in the use of the joint principle is a study by Gibbs, Davis, and Lennox (1935). These researchers observed a large number of electroencephalographic records of patients suffering from petit mal epilepsy and of normals showing no symptoms. They found that approximately 85 per cent of patients with a history of seizures showed abnormalities

of brain-wave rhythm during nonattack periods, while only about 10 per cent of persons having no history of seizures showed the abnormalities. With the evidence from this series of positive instances showing dysrhythmia as a common element in epilepsy and the negative instances showing lack of dysrhythmia among the healthy persons, it was possible to conclude that epilepsy and dysrhythmia were related, even though not perfectly.

The joint principle is an improvement over the principle of agreement, since it makes use of negative instances as a check on agreement alone. However, similar pitfalls exist in the use of this logical method as in the case of the principle of agreement. The approach may also be experimental or observational in nature. In the case of Gibbs, Davis, and Lennox, it was observational inasmuch as neither dysrhythmia nor epilepsy could be produced experimentally. In a sense the principle makes use of a number of random cases to counterbalance the failure to be able to control each instance perfectly. While the logical method of agreement seeks a number of differing instances of the effect, noting if they agree in one antecedent only, it pays no attention to events in which either the antecedent or the effect is absent. The joint method of reasoning adds this as a safety factor. The principles of difference and concomitant variation, on the other hand, seek to arrange two or more instances, each one with a given type or amount (or presence or absence) of some variable but alike in every other respect. The effect is then measured in the two instances.

The Logical Method of Residues. This approach is essentially a process of systematic elimination of all the possible variables which could account for an observed effect. When given a strictly limited number of independently acting causes which have been associated with measurable effects, but with one effect and one possible cause left over, then these remaining elements are related causally. Basically, the reasoning is like the simple deductive arithmetic we often use in computing expenditures. For example, when we know we had $10 and have spent $4, we should have $6 left. We might wonder how much dinner has cost out of this $4 but cannot remember. We know that a dollar has gone for a haircut. Eighty cents was spent on cigars. By elimination, $2.20 must have been spent on dinner. This is correct if we have not forgotten anything else. The risk of incomplete elimination is the great danger in the use of the principle of residues.

Psychologists do not often find the procedure of extracting residues useful. Astronomers and biologists, however, have made excellent use of it. The narrowing down of vitamin deficiencies is a good example in the case of biology. The discovery of the planet Neptune is an example of its use in astronomy. The information required by the use of the principle must be precise, complete, and quantitative—conditions which are practically never met in psychological research.

The Problem of Interactions. The use of the methods of logical analysis is by no means a simple thing in most psychological research. Rarely do we have the ideal conditions that are required for proof with a high degree of confidence. As we depart more and more from these ideal conditions, our interpretations become more and more hazardous. Even under excellent conditions the use of the experimental canons involves essentially a process of elimination. We try to find the antecedents or causes of certain events by eliminating all the variables that could possibly be involved. The one that remains has at least a good prospect of being significantly related to the event in question.

Some of the special obstacles to the adequate use of the logical principles stem from interactions among variables that we cannot isolate. Processes may be reciprocally related, that is, each may be the cause and effect of the other. A psychological counselor once observed the following situation faced by a troubled student: The student complained that his relationships with other students were very poor. People never warmed up to him and generally avoided him. They never seemed willing to confide in him concerning personal matters. It became clear to the counselor that, in fact, the student himself had never been able to participate comfortably in social relations even when he had the opportunity. On every occasion he avoided personal contact and insulated himself from all relationships which appeared threatening to him. These are two events which are related in some way—the attitudes of the student and the reactions of his associates toward him. But which is cause and which is effect? Is the attitude of other students responsible for his insulation, or is his own avoidance of others the actual source of their indifference? Both conditions probably depend on each other. A circle has been set up, and the two events are quite reciprocal.

As we have pointed out before, our interpretations may be faulty because the two variables which are related coexist but may, in reality, both be effects of a third, hidden or unknown factor. It is also possible to obtain data refuting the existence of a relationship when one is actually there. The events may appear not to vary together because of the presence of a third factor which prevents their covariation. One conception of the etiology of homosexuality depends upon such a possibility. There could be a relationship between endocrine factors and homosexual behavior patterns which is masked because the appropriate adolescent experiences must also be present to bring out these latent biological potentialities. A biologically disposed individual may not become homosexual if he is not subjected to heterosexual thwarting and homosexual opportunity. Because of interactions between biological and social factors he will be a negative case even if the theory is partly correct.

Even if we could isolate many of the important psychological variables and experiment with them individually, it would not always be satisfactory,

since the influence of one factor is apt to vary depending upon many conditions. For example, an unwanted child who is also sickly and feeble may not learn to make the same adjustment as one who is physically robust. If we measured the degree to which a child is accepted or rejected by its parents and also observed his later adjustment, we might conclude from some observations that being rejected in childhood has no influence on later personality. However, if we knew how parental rejection interacted with physical factors, school experience, economic conditions, social mores, and so forth, the conclusion might be different. A common reaction to this difficulty is to say, "It's a nice trick if you can study all these interactions." Yet this is exactly what we must, in the long run, systematically do. Our experiments are increasingly likely to be, not single-variable, but multivariable designs in which we measure experimentally and statistically the interactions of many variables not only within the experience of a single subject, but among many different persons. We are just beginning to find techniques to do this on a simple scale.

Interactions among events are important in most psychological phenomena. Several causal factors may be isolated and measurable, no one of which alone is sufficient to produce the event or to account for all the variation. We cannot today discover any consistent physiological variables which are associated with the functional psychoses. Nor can we find to our satisfaction the psychological variables which are indispensable for severe mental disturbance. In the future we will probably discover that certain patterns of psychological events in an organism having certain physiological characteristics lead to behavior which we identify as psychotic. These interactions along with the multiplicity of levels on which events may be described make our task all the more confusing and difficult. We are beginning to introduce into our experimental methods multiple-variable designs which enable us to measure these interactions.

In our struggle to generalize we lump all people who are psychotic into one group, often ignoring the innumerable individual differences which exist between psychotics. Some of the difficulty lessens when we subdivide the psychotics into groups which are similar in certain important ways. We may differentiate them into schizophrenics, paranoids, depressives, etc. Moreover, we can further subdivide schizophrenics into the simple, paranoid, catatonic, and hebephrenic types. Actually the trend today in psychopathology is to pay less attention to symptoms and to attempt to subdivide patients on the basis of psychological mechanisms. This is simply another perhaps more fruitful way to slice the cake. While the interactions between variables make our task very difficult, the elementary principles of logical analysis and experimentation, when properly applied, are the only sure ways of achieving reliable knowledge.

The Multivariable Design. As we have pointed out, Mill's logical principles form the basic reasoning for all experimentation. However, the

principles of difference and concomitant variations, when adhered to strictly as experimental designs with only one variable, are rather restricting to the experimenter who must study interactions. It would not be appropriate for us to duplicate competent textbooks on statistics by a detailed presentation of the multiple-variable designs and the techniques of the analysis of variance and co-variance. However, some mention of them and what they enable us to do appears in order. The student will easily find a large number of references for these techniques.

The *analysis of variance* is a statistical tool for assessing the significance or reliability of an observed effect. It allows us to arrange the data of a complex experiment so that the contribution of several variables at once may be assessed. For example, supposing we have varied the conditions under which we tested a number of neurotic patients. In one condition we have reassured the patients, in a second condition we have mildly threatened them, and in the third condition we have severely stressed them. By the analysis of variance technique we are able to determine whether the variable which we might designate as degree of stress has any effect on the patient's performance. In other words, we can determine the variation of performance due to the conditions of test administration. In designing the experiment we might have used any number of experimental conditions and analyzed the extent to which this variation in testing condition affected the performance of the patients. This is one of the contributions of analysis of variance. It allows us to vary more than one condition.

We have mentioned a simple instance of the study of the effects of several variables. It is worth pointing out that, if we wish to attribute the variations in the performance of the different groups of patients to the experimental conditions, the same principle (the closed system) that Mill enunciated many years earlier must still be used. For example, it is necessary to be sure in the experiment just described that the patients in each group were comparable. Otherwise we could not tell whether the differences we found were the result of the variation of the experimental conditions or the differences in the groups of patients. This is actually a common sampling problem in experimental design. It is necessary to control, in this case, the variable of intergroup differences.

A particular advantage of the analysis-of-variance technique has to do with the fact that it enables us to measure interactions among several variables, and interactions are sometimes the most important effects to be observed. For example, it is quite possible in the experiment we just illustrated that the effect of the different conditions of test administration is not uniform for all patients. Instead, it may depend upon the individual who is being tested. It may be that the performance of some of the patients would be improved under stressful circumstances, while the performance of others may be impaired. If some patients improve and others show impairment under

stressful testing conditions, then these effects may cancel themselves out in the analysis of the means for the groups. We might actually conclude that the conditions did not make any difference when they really did. The analysis-of-variance procedure permits us to determine whether there is any interaction between type of patient and type of condition. There are a number of instances in psychological experiments in which there can be shown to be no main effect from the variation of some condition because it was canceled out by individual differences in response. In that case significant interactions may be found between the subjects and conditions.

There are many kinds of interactions which may be studied by analysis of variance. The technique represents a real advance in the statistical analysis of the data from experimentation. It has become exceedingly popular in psychology in recent years for obvious reasons. The *analysis of co-variance* is a related refinement in the statistical treatment of experimental data which also frees the experimenter somewhat from the confines of the one variable problem. It does this by enabling the experimenter to assess the effect of some independent variable even though some other factor is operating at the same time. If the effects of the irrelevant variable can be measured, then its influence upon the event we are concerned with may be canceled out (controlled) statistically, and we are still able to draw our conclusions about the relationship between our two critical variables. In other words, it is a statistical form of control.

The use of multivariable designs of experimentation which are made possible by analysis of variance and co-variance is so important in the clinical psychology and personality fields that the student who hopes to be competent in these areas of study should become familiar with them and with the statistical principles which underlie them. The clinical psychologist can no longer be completely ignorant of modern statistics and measurement and still function adequately.

SPECIAL PROBLEMS IN CLINICAL PSYCHOLOGY

Science and Art. Although clinical psychology is in a tremendous era of expansion and development, it has been somewhat slow to adapt the basic methods of science to its own particular content. This is true of the theoretical as well as the applied aspects of the field. Along with the social and biological sciences, the problem of the precise prediction of behavior, the establishment of concepts which can be readily tested in this area, and the elimination of "idols" or special biases relating to clinical practice offer very great difficulties.

At first blush it might seem that clinical observations are such that they cannot be measured with enough precision to warrant their handling through scientific analysis. This has led some psychologists to distort their conception

of scientific procedures beyond all recognition and good judgment. Many clinicians, apparently lacking in scientific understanding, have claimed scientific status to what is little better than a hodgepodge of pretentious word salads. Others have become impatient with the demands of scientific methodology. They have been discouraged with the tendency of nonclinical psychologists to reject clinical concepts because they are not so precise and quantifiable as in the physical sciences. They have retreated behind the belief that the practice and theory of clinical psychology must be a subjective art and therefore does not demand the distasteful rigors of scientific methodology. Both groups do the field of clinical psychology and personality theory, in which there are so many exciting possibilities, a grave injustice. The first group leads us to vague and questionable concepts which cloud, rather than clarify, the issues. The latter group misses excellent opportunities to explore new and old techniques which are methodologically sound and which still hold realistically to the kinds of special material which the clinician deals with. The outstanding clinicians, of which there are many, and the rising crop of graduate students are beginning to become more impressed with what might be done with the application of scientific procedures to clinical material.

The Individual Case. The field of clinical psychology deals in the applied sense with individual cases rather than with groups of people. The clinician is confronted with a particular person whose problem must be understood and dealt with. While it is true that most clinic cases often have a great deal in common with other cases, in very important ways each one is always unique. Although psychology has spent most of its energies on developing principles of human conduct, these principles have not provided the clinician with an understanding of the individual patient. To be sure, the general psychological principles give him broad clues about what to look for etiologically. They give him information about typical people, and they provide him with some idea of the range of deviations from human norms. But the clinician cannot afford to think in terms of probabilities. He needs to know what to expect from a particular individual.

The approach which the clinician therefore uses in his study of the patient and, in fact, in much of his general study of personality dynamics, is a thorough examination of the particular case. He attempts to gather as complete a description of the individual as he can in order to study the conditions which relate to his problem behavior. His aim is to find the pattern of events which produced the symptoms that are now troubling the patient. In fact, he proceeds in exactly the same way in studying the personality of the healthy individual. This individual approach to behavior study has been given the term "ideographic" by Gordon Allport. It is also subject to exactly the same rules of analysis which we have previously described for the more traditional kinds of data.

The ideographic approach has been put in apposition to the "nomathetic" frame of reference which obtains its data from the study of groups. The nomathetic frame of reference attempts to provide norms and general principles of behavior under specified conditions. In using it one is likely to ignore the meaning of individual deviations from the rule or central tendency.

There can be little doubt that, by themselves, both the nomathetic and ideographic approaches to the study of behavior provide us with an incomplete story. The concepts which are necessary for the understanding of the particular patient must come from the use of both frames of reference. For example, we cannot predict a single 5-year-old child's concept of death by studying how 5-year-olds in general think about the subject. Nor does a complete study of a single 5-year-old give us any reliable knowledge of what other 5-year-olds are like. It is necessary for us to study the pattern of the particular case as well as to examine the common and differing elements between that case and others. In the former instance we are dealing with intraindividual data (which is what the clinical psychologist obtains in the case history and by observing the patient under different circumstances), and in the latter instance we are dealing with interindividual data (by comparing one person's responses with another's). Both are actually indispensable to adequate personality study.

Terminology. Special difficulties are encountered in clinical psychology because of our often ill-defined terminology. For example, we often speak about the "normal" and "abnormal" individual without ever clarifying what we mean by these terms. These terms can be defined in many ways. We may define normality statistically or in accordance with some social ideal, in which case we mean entirely different things. Moreover, we may classify a patient as an obsessive and discover that in many important ways we are not able to differentiate him from some hysterics. One theorist means one thing by the term "multiple personality," while another has a slightly different idea. One mental hospital may classify a certain group of behavior patterns as simple schizophrenia; another calls the same pattern psychopathic deviate. These semantic confusions can be cleared up gradually by uncompromising efforts.

Underlying Causes and Superficial Behavior. Two behavior patterns, superficially similar, can arise from entirely different motivations. One person may be honest in a situation because he fears being caught and punished, while another person may behave honestly because he develops severe anxiety and guilt feelings in situations where he has antisocial impulses. Two similar motives may also result in markedly different behavior. In one man the desire to be liked by others may lead to overtalkativeness, while in another man (or in fact in the same man under other circumstances) it may produce severe social inhibition. In these cases it is not the superficial behavior which is important but rather the conditions that underlie it. We are usually less

interested in the fact that a man lied than in the fact that he did so to save face before his family. The problem for the clinician is that he cannot make full use of the overt behavior of the patient satisfactorily. It is necessary for him to search for sources of behavior (usually in the form of motives and mechanisms) in order to make the behavior meaningful.

Discovery and Proof. We have said that experiments are not so much methods of discovery as methods of proof. They enable us to evaluate our observations and draw meaning from them. Occasionally their use may lead us to find other relationships that we did not previously suspect. But this is usually in the negative sense of being forced to look elsewhere to explain what we have observed. In the study of personality and in the research into clinical psychological problems this distinction between discovery and proof is easily recognized. We obtain most of our hypotheses from direct contact with people who are adjusting or having difficulty in making adjustments. In psychotherapy and in attempts at personality evaluation in the clinic, as we see important samples of human behavior, we are led to hypotheses about personality mechanisms. This is the stuff that clinical research begins with. These observations are an essential part of our struggle for adequate theories. We would not do experiments if we did not have this fruitful source of data from which to evolve our concepts of personality. One of our special troubles is that many of these observations cannot be quantified readily, and many of the concepts have not been tested fully enough to be adequate empirical models. But it is important to recognize that the two sources of ultimate knowledge—the clinic and the experimental laboratory—are indispensable to each other. The former is a source both for observations and hypotheses; the latter is, at least partly, the means of verification and the guarantee of reliable knowledge.

Common Assumptions in Clinical Psychology. Every area of investigation by science has its assumptions or postulates. As we pointed out before, science itself is founded on a number of general assumptions. It is like building a house of cards. If the foundation is removed, the structure topples. Special fields make use of their own assumptions, as do particular theories and experiments. The fewer assumptions we need, the better off we are, since there is less danger that the structure will fall as a result of one of them being proved false. Like all other special fields of study, clinical psychology rests on certain particular assumptions. It is important for us to recognize what they are.

Like all psychologists, clinicians and personality theorists consider all behavior to be lawful. This assumption is frequently identified by the more elaborate expression "psychic determinism" which we have mentioned earlier. All our behavior on any level of complexity has its determinants. Even slips of the tongue, mannerisms, styles of action, and handwriting are data worth investigating and relevant to our understanding of the individual. We may not always be able to find the determinants of a slip of the tongue, but we

are confident that they can be studied by scientists and eventually brought to light. The principle of psychic determinism does not limit us to any one explanation. It merely states that behavior is not random or meaningless.

The psychologists studying personality and clinical behavior also generally assume that people are motivated organisms and that a large portion of their behavior arises from biological drives and social motives. These motives are probably hierarchical in nature in the sense that some have greater urgency or strength than others. Motives must be inferred from the behavior of the individual since they are hypothetical constructs which we cannot see. When we measure them, we do so only indirectly.

We further assume that there is a degree of consistency to the motive systems of any individual and to the ways in which he gratifies or attempts to gratify them. We recognize the people we know from day to day. John is generally aggressive. When Mary plays cards, her hands tremble. Bill is usually the last one to comment upon some classroom issue, and when he does, he can usually be expected to go counter to the general point of view. These are consistencies which are very important, for they help us predict behavior and study its lawfulness. On the surface we may also find many inconsistencies. We assume, however, that if we fully understood all the conditions, we would discover that there are consistent motive patterns which determine even behavior which varies from one context to another. It is these motives which the clinician seeks to find and understand along with the characteristic mechanisms by which the individual may gratify them. By observing behavior in a variety of situations, the clinical psychologist tries to identify consistent styles of thinking or reacting and modes or habits of defense and develop theories which explain their development.

In addition, almost all clinical psychologists and personality theorists assume that these patterns of behavior are, to a large extent, learned. The development and modification of personality is therefore partly a learning process. This is an extremely well-founded assumption. The exact ways in which learning processes and the physiological and hereditary characteristics of the organism interact are far from clear. But psychologists agree that there is such interaction.

Finally, for many years it has been fashionable among clinicians to assume that motivation may be unconscious. What is meant by unconscious motivation is not always uniform among different psychologists. Some definitions stress an active struggle among hypothetical psychological processes, some conscious, others unconscious, as in the case of the Freudians. Others avoid such constructs because they appear demonological. Some people prefer to speak of levels of awareness rather than consciousness or unconsciousness. Almost all clinical psychologists assume, at least, that human behavior may be determined by processes of which the individual is totally or partially unaware. Psychodiagnosis consists to a large extent of determining a

person's motives and his interactions with environmental demands upon him, especially where he is unable to communicate or recognize them himself.

If we understand the assumptions clinical psychologists make, some of which we have briefly outlined, then the way in which clinicians approach their problems becomes clearer. Psychotherapy, projective methods of personality evaluation, the kinds of events which are the data for the clinician's research, and the hypotheses and theories seem less startling. Much of the clinician's work rests upon these general assumptions as well as many others which are more specific to special problems and techniques. Many of them overlap with the assumptions of psychology in general. They are necessary in understanding the empirical relationships found for human behavior and in giving substance to our attempts at the evaluation and treatment of mentally disturbed people.

CHAPTER 3

CLINICAL TECHNIQUES

In this chapter we shall be concerned mainly with certain general procedures which arise out of the attempts of the clinical psychologist to understand the particular patient. The basic techniques we shall discuss here include the case history, the clinical interview, and diagnostic tests. We shall also point out the problems of making use of these procedures for diagnosis and prognosis. In later chapters we shall become more specific about the special tests which are available for the purpose of clinical diagnosis.

While the clinical psychologist and the personality theorist are always striving to find general principles or rules to account for all the varieties of behavior which they find inside and out of the psychological clinic, they are well aware that the principles which psychologists have developed have not yet enabled them to effectively predict and understand any particular patient's behavior and symptoms. It is necessary to trace the life experiences of the individual and to study his unique characteristics and behavior patterns in order to say something about the mechanics of his particular illness. Placing him into one of the many diagnostic categories which have been established in the field of personality and abnormal psychology (such as hysteria, paranoia, etc.) has only limited value in understanding the patient. There are so many important differences within the categories of hysteria, paranoia, etc., that information of a much more individual nature must be obtained.

In making evaluations upon which treatment techniques may be based, the clinical psychologist is essentially a seeker of information. He wishes to find out about the patient's motivations, the kinds of behavior which he shows in responding to these motives, and the situations which have become associated with these motives and response patterns. Whatever theoretical approach one maintains about the nature of personality, situations (stimuli) and behavior (responses) make up the psychological material which the clinician analyzes to understand the individual's difficulty.

In the clinical situation, the easily observed superficial behavior is usually less important than unrecognized behavior patterns and motive systems which must be inferred by the clinician to make the behavior meaningful.

This task of interpretation is no simple matter. We shall see as our discussion develops that the inferences or interpretations depend to some extent upon the kind of theoretical approach which the clinician holds to as a guide as well as upon the validity and the completeness of his information. We shall discuss the various theoretical ways of viewing personality in a separate chapter. In this chapter we shall concentrate most of our attention upon the sources of information about the patient under study.

SOURCES OF INFORMATION

In order to understand why the patient behaves as he does, a great deal of information is required. Generally we look for facts about the patient's capacities, motivational patterns, conflicts, and the ways he has learned to deal with all these. Theoretically we are interested only in the data which are relevant to his present condition; but because of our meager understanding of personality development, we never know which data are relevant until after we have accumulated most of the available information. However, this search for information is never entirely in a vacuum. It is always directed to some extent by our concepts of personality. The psychoanalytically oriented clinician stresses as relevant material which fits the psychoanalytic framework, and he couches his interpretation of the patient's life pattern in the appropriate terminology. On the other hand, the psychobiologist is apt to place emphasis upon somewhat different information and to use his own terminology to describe the individual and interpret his behavior. And finally the medical or biological framework which regards mental disorders as a physiological or biochemical process with psychological concomitants will lead the clinician with such a bias to a third and still different selection and formulation of the data about the patient. This is the case because different concepts of personality are held by different personality theorists and clinical psychologists. The main disagreements between the theoretical points of view are in the interpretations of the significance of the data which are collected. However, whatever the theoretical approach of the investigator may be, three main sources of information may be found. These are the case history, diagnostic or therapeutic interviews, and diagnostic tests. In the following section we shall examine the most important problems connected with the use of these three sources of clinical information.

The Case History. A case history of an individual is essentially a story about his life presented in the most complete and objective manner possible. The main facts about his development and the events leading up to his present status are obtained from a wide variety of sources. The facts must then be organized and analyzed along with other kinds of data so that the nature and causes of the patient's problem may be understood more

fully. Psychologists have found the case-history technique a valuable source of data for applied and theoretical purposes. Its value, however, depends upon the reliability of the information which is obtained.

Reliability. The main source of the information for the case history is usually a person connected with the patient in some way or the patient himself. Many of the data depend upon the informant's memory and other accounts of the patient's behavior. Part of the history, however, may be taken from formal records such as baby books, school records, police courts, military organizations, clubs, institutions, or clinics. These latter records, of course, form the most objective sources of information.

Parents, teachers, or friends often provide the main body of facts about the patient. Sometimes the patient may be the major or only source of data, but if such is the case, the reliability of the material is severely decreased. In practice the clinician tries to utilize as many of these sources as can be found in compiling the life story. One source should always be checked against another. Some of the information can be identified immediately as faulty. The biases of the people offering information must be evaluated. In any event the use of informants is always hazardous. This is illustrated in a study by Doering and Raymond (1935), who investigated this problem of reliability by checking the information given by the mothers of 60 patients at the Boston Psychopathic Hospital. Even in factual items like date of birth and highest school grade, errors were made by 11 per cent of the mothers. In questions involving hereditary factors like mental disease, 26 per cent of the mothers gave incorrect information.

Often the information given by the family of a mental patient is incorrect because of conscious or unconscious attempts to cover up skeletons in the family closet or to place the family or patient in the most favorable light. Despite warnings on the part of hospital physicians that faulty information may harm the chances of the patient to recover, it is frequently found that the patient's family knowingly gives false information.

Sometimes by appropriate checks through several sources, valuable information may be derived from the errors or distortions of fact which are made by the patient and his family. It is useful to obtain the patient's impressions of past years even if they are inaccurate, for these attitudes provide us with a better understanding of his problem. The attitudes of the patient's family may also give us some idea of the environment which he was adjusting to and to which he would have to return upon recovery.

Content. Case histories may vary greatly in form but, in general, similar kinds of information are derived from all of them. The information sought may be classified into an outline of the sort Louttit (1947, p. 68) has published. This sample outline is a condensed version using only very broad categories. These may be expanded greatly, depending upon the completeness of the report. Louttit's version includes the following categories:

A. Personal history
   1. Present
      a. Description of behavior
      b. Physical condition
      c. Performance ability and achievement
      d. Living conditions
   2. Past
      a. Birth and infancy
      b. Health
      c. Education
      d. Other experiences and activities

B. Family history
   1. Parents, siblings, and others living in the home
   2. Grandparents and collateral relatives not living in the home

One can readily see that highly detailed data in the life of the person being examined may be fitted into any of these categories.

Another version is presented by Richards (1946, pp. 22–25):

Identifying data
Genetic history
Personal history
   environmental factors
   infant habits
   physical illness
   school history
   work history
   history of delinquency
   psychosexual development
   social history
   behavioral history
   use of drugs

Despite differences in appearance, case histories using Louttit's and Richards's outlines will provide essentially similar data about the patient. They are characteristic of all case-history outlines.

The Autobiography. A great deal of the information about the patient which is usually gathered from a case history may be obtained from an autobiography. This technique of data collection is only useful with reasonably intelligent and literate people who are not severely ill. It is particularly useful in college clinics. An abbreviated form for an autobiography will be presented here to illustrate in greater detail the kinds of information sought. Of course the same sort of data can be obtained from the more time-consuming technique of direct questioning.

FORM FOR AUTOBIOGRAPHY

DIRECTIONS. Please glance over this outline to get a general idea of what is required, and then write your autobiography without consulting it. When you have finished writing, read over the outline carefully and add, as a supplement, whatever information you omitted in your original account.

FAMILY HISTORY

(*a*) Parents: (1) Race, education, economic and social status, occupations, interests, opinions and general temperament, state of health. (2) General home atmosphere (harmony or discord). What was the attitude of each of your parents toward you: (affectionate, oversolicitous, domineering, possessive, nagging, anxious, indifferent, etc.)?
Attachment to family (close or distant), favorite parent; fantasies about parents; disappointments and resentments. Which parent do you most resemble?
Discipline in home, punishments, reactions to punishment.
Moral and religious instruction.
Special enjoyments at home.
(*b*) Sisters and brothers:
Order of birth; characteristics of each.
Attachments and resentments; conflicts.
Do you feel superior or inferior to sisters and brothers?
(*c*) Larger family circle. Grandparents and relatives.
(*d*) Physical surroundings of youth. City or country; nature of home.

PERSONAL HISTORY

Date and place of birth.
Nature of birth (natural or Caesarean; short or long labor).
Time of weaning.
First experience you can remember.
Recollections of each parent during your early years. Did you feel secure and at peace in your relationship to them?
(*a*) Early development. Was it precocious or retarded? When did walking and talking begin?
Illnesses.
Habits, thumb-sucking, nail biting, bed-wetting, stammering, convulsions; tantrums, fears, nightmares, sleepwalking, revulsions, finickiness about food.
Play. Toys and animals; other children.
Fantasies of self; favorite stories and heroes.

General attitude. Was your general attitude adaptive (cooperative and obedient); aggressive (competitive and assertive); timid (sensitive and fearful); guileful (teasing and wily); refractory (negative and resistant)?

(*b*) School and college history.
Age at entrance; age at graduation.
Scholastic record; best and worst subjects.
Friendships (many or few, casual or deep); quarrels; moodiness and solitariness.
Association with group (shy, submissive, genial, confident, forward, boisterous, aggressive).
Were you ignored, picked-on, ridiculed, bullied?
Attitude with groups (shy, submissive, genial, confident, forward, boisterous, aggressive).
Ambitions and ideals.
Hero-worship. Were there any particular people (historical or contemporary) whom you attempted to imitate? What qualities did you particularly admire?
Interest and amusements.

SEX HISTORY

(*a*) Early knowledge. Curiosity about the body, especially about sex differences.
What theories did you hold about childbirth?
When did you discover about the sex relations of your parents? Were you shocked?
Sexual instruction.

(*b*) Early practices: masturbation, relations with the same or the opposite sex.
Did you play sex games with sister or brother? Did you want to see others naked or display your own body?

(*c*) Puberty experiences of a sexual nature. Have you ever been in love? How often? Did you quarrel? What type of person was selected?

(*d*) Erotic fantasies; reveries of ideal mate. What kind of activity was imagined as specially pleasurable?

(*e*) What emotions accompanied or followed sex experiences (anxiety, shame, remorse, revulsion, satisfaction)

(*f*) What is your attitude toward marriage?

MAJOR EXPERIENCES

Positive (events accompanied by great elation; success and joy).
Negative (events accompanied by great depression and discomfort: frights, humiliations, failures, transgressions).

Aims and Aspirations. What are your chief aims for the immediate future? If you could (within reason) remodel the world to your heart's desire how would you have it and what role would you like to play in such a world?

Estimate of Self and World

State briefly what you believe to be:

(1) Your general estimate of and attitude toward the social world.

(2) The world's estimate of and attitude toward you.

(3) Your general estimate of yourself.

Interpretation. Because adequate devices for testing the reliability and validity of the case-history data are not readily available, the chief safeguard against error has to be the complete and honest presentation of the pertinent data by the investigator regardless of his preconceived ideas. If the data are fully and carefully described, the pattern of events in the life history may be compared with the patterns of other cases. Common elements emerge from this comparison, and it is possible to construct reasonable hypotheses concerning the development of the patient's problem.

However, there is the danger of placing too much emphasis on irrelevant or unimportant details in the case history or of ignoring significant developments. Since each case is typically evaluated by itself, the incidents in the life history are usually interpreted in a causal chain, depending upon the theories of the investigator. The qualifying influence of normative studies is apt to be overlooked. As a result of his theoretical leanings, the investigator may select for emphasis only those incidents which clearly demonstrate his point of view and will interpret them in accordance with the theory or formula to which he is committed. In the long run our understanding of the material in the case history will depend upon the thoroughness of our knowledge about the influence of specific hereditary, physiological, and environmental factors and their interactions in personality development.

In examining the case history we may discover that the toilet training of the individual in infancy was particularly rigid and that tremendous emphasis was placed on orderliness in the household. If we happen to be psychoanalytically oriented, this fact is of the greatest importance in understanding the individual's present behavior patterns. To the analyst this means that, in one of the earliest experiences with the demands of his environment, the patient learned that properly depositing his feces or being neat was socially rewarding. These social requirements, to which he then responded in a particular way, probably exemplify one of his parents' attitudes throughout childhood and may give us clues about other aspects of the patient's family life as well.

It is more difficult for many people to go along with the psychoanalytic

interpretation of toilet training than to agree that divorce in the family may be a major source of insecurity for a child. Yet the same question of validity arises in the latter case as in the case of the question of toilet training. What significance for his life pattern can we attribute to parental divorce when the patient was 9 years old? If we say it was a major influence, then how do we deal with the observation that many thousands of well-adjusted people also have a history of parental divorce? The *ad hoc* reasoning we use in case-history analysis proves to be dangerous. We realize that divorce in one family is severely traumatic, while in another it is dealt with effectively by the child. Why? Certainly other aspects of the latter child's history must differ in important respects. There are interactions or patterns that we must examine. Divorce in one setting will have different effects than it will have in a different setting. The same applies to harsh experiences in toilet training. The facts we have about these interactions are extremely limited. This is one of the great challenges in the study of personality development.

Better prediction from the case-history data is one of the goals toward which we are striving. Ideally we should like to be able to say that given such and such a series of experiences, in a particular sort of human organism, the following will be the result. At the present we use a combination of experience, common sense, and our theories of personality development to interpret the case-history data. We come out with hypotheses which need constant revision and verification. It is important that the clinician recognize the tentative nature of his interpretations or else he will never do the research necessary to refine his predictions and study these interactions which are so important in personality development.

Because of the tremendous importance of case histories in clinical psychology and in the study of personality development, attempts have been made to increase the reliability and objectivity of the technique. Among many psychologists there has been the belief that case histories are not valid data for scientists because of the great pitfalls that are found in their valid interpretation. Activity along these lines seems to move in two directions, toward the formulation of acceptable criteria or standards for the adequate case history, and toward attempts at more quantified procedures of comparing patterns of similarities between persons in test performance and case histories.

In the former case the work of Dollard (1949) most readily comes to mind. Dollard argued that the abandonment of the field of the life history to art, or as hopeless from the scientific point of view, is not defensible. He proceeded to present a systematic effort to define the issues which must be faced by a life-history technique in order to be adequate for use in the social sciences and illustrated his seven indispensable criteria in a series of life histories. Dollard maintained that the individual in a life history must be viewed as a specimen in a particular culture; that the person's motiva-

tions can be understood only in the context of the demands of a society; that the particular and important rôle of the family group in transmitting this culture must be recognized; that the specific ways in which the biological characteristics of the individual are elaborated into social behavior and interact with social pressures must be shown; that experience from infancy through adulthood is related in a continuous way so that adult behavior must be seen in terms of this continuous line of development from childhood; that the immediate social situation must be seen as a factor in the present behavior and its influence specified; and that the life history, once told, must be organized and conceptualized by the clinician as contrasted with a series of unrelated facts.

In establishing some tentative standards for the life-history technique, Dollard has by no means solved all the problems related to the use of this kind of material. However, he has been a pioneer in stating the need for criteria which will increase the reliability of the approach and the uniformity of treatment of life-history data. The direction has merely been indicated, and much more along these lines will need to be done to further systematize this extremely valuable tool in the understanding of a particular individual.

A beginning in the systematic study of similarities in patterns of behavior has been made by Zubin (1938). Zubin presented a technique for subdividing a group of people into classes of "like-minded" individuals with reference to some social or behavioral criterion. This means that all the people in each subgroup display similar patterns on the criterion studied. The steps in the analysis are as follows: (1) obtaining scores of agreement of each individual's responses, experiences, etc., with every other person in the group; (2) tentatively dividing the group on the basis of these agreement scores; (3) identifying the pattern of behavior that accounts for the agreement in each subgroup. It becomes possible with this sort of approach to find common patterns among different people in case histories, performance on personality inventories, behavior in an interview situation, or any other kind of clinical situation in which it is important to identify classes of behavior. It might then be possible to identify these patterns and relate them to other variables in some roughly quantitative way. For example, in the search for the case-history antecedents of neuroticism, schizophrenia, or any other syndrome of behavior, we might discover some common patterns or clusters of patterns which appear to be related to the development of one of these syndromes.

The technique of measuring like-mindedness that was proposed by Zubin has not developed greatly up to the present time, although it does seem to offer one of the few quantitative devices for studying complex social behavior. Forms of pattern analysis have been more recently suggested which have been applied to some extent to the projective tests. In these cases various signs (consisting of certain kinds of responses) have been used to

indicate brain pathology or personality type or some other classification of persons. Other techniques which involve patterns of performance have also been suggested, but not well worked out, with the hope of correlating them with some other kind of personality measure. This kind of activity has been described briefly in a later chapter on personality measurement. The primary motivation for this work seems to be the need for some objective device for dealing with complex patterns of responses rather than the use of single attributes which usually involves the loss of most of the richness of human behavior Until recently the clinical psychologist was little impressed with the need for objectivation and quantification and preferred to depend upon his own subjective and qualitative judgment. Although the need for quantification of clinical observations has not yet produced much by way of satisfactory answers to our measurement problems, the student would do well to watch for the elaboration of these kinds of developments in the future.

A large number of other psychologists, mostly interested in personality study, have discussed the merits, techniques, and difficulties of the case-history methods. Allport (1942) has been one of the strongest advocates of this method among current personality theorists Symonds (1931) has emphasized the practical aspects of the case history and minimized its usefulness as a research method. Lewin (1936) has evaluated the study of the individual case as the only method of evolving a non-Aristotelian science of behavior. Williamson and Darley (1937) have discussed case work in detail and pleaded for greater objectivity and longer case records in guidance work. Jones (1944) caustically comments that psychologists with their exceptional regard for objective tests tend to ignore important material in the case study. He writes, "They would apparently rather record a neurotic inventory score taken from a test, even when they do not know what the test really measures, than to note that a boy was clumsy in his oral expression and that his nose kept twitching as he talked, data that may have obvious social implications." Murray and his coworkers (1938) have proposed and used case-history techniques fruitfully in the study of personality. Some of the other discussions of the uses and techniques of case study may be found in Marzolf (1940), Louttit (1947), English and Raimey (1941), Davis (1945), Horst (1942), Lazarsfeld and Robinson (1940), Hamilton (1946), Bristol (1936), Bellak and Jacques (1942). Some illustrative case studies may be found in Hawkes (1937), McCallister (1936), Reavis (1926), Smithies (1933), Brewer (1926), Elkin (1947), White, Tomkins, and Alper (1945), Burton and Harris (1947), Rosenzweig (1949), Anderson (1923), Cavan (1928), Plant (1937), Malinowski (1926), Jarvis and Ellingson (1940), and Sayles (1925), to mention a few. The great majority of clinical practitioners today make some use of the history-taking techniques.

The Interview. There are, of course, many uses to which interviews may be put. They may be therapeutic in purpose, a means of giving information

to someone, or a technique of obtaining information about a person. It is as a source of information that we are concerned with the interview in this chapter.

As we have suggested, aspects of the case history may be obtained directly from the patient through an autobiography or by means of the face-to-face interview situation. Actually the interview is the basic diagnostic technique. Psychological testing is really no more than a standardized interview situation In the face-to-face situation the examiner gets many of his cues about the problems and defenses of the patient. There is no substitute for the clinical interview. No one has yet found a superior way to obtain diagnostic information so long as the interview is handled competently and over a long enough period. It may be handled as a fluid situation which allows maximum interplay between examiner and patient, or it may be standardized and inflexible.

Within the information-seeking class of interviews there are a number of special purposes for using the technique. Sometimes it is employed in the initial screening for psychiatric fitness preceding induction into the armed services. In other instances the individual is being evaluated for employment. Most people have had some experience with either or both of these kinds of interview situations. The interview may also be used in a preliminary psychiatric evaluation at a clinic or hospital before a selection is made of the type of treatment and therapist. In addition it may be the technique used in public-opinion polling or in social research. The work of Landis and his associates (1940), who investigated psychosexual development, and that of Kinsey (1948) on male sexual behavior illustrate the use of interviews in research on topics which are difficult to study systematically by other means. In a great many clinical situations the interview is both a means of obtaining diagnostic information as well as performing a therapeutic function. The way it is conducted usually depends upon the primary aim of the interview. Exact techniques differ greatly among different interviewers.

It seems desirable at this point to emphasize the distinction between the therapeutic interview and the purely diagnostic interview because the difference in objectives makes a considerable difference in interview procedure. As we have said, some interviews have both objectives. The therapist is usually concerned with evaluating the problem of the patient. He believes that the successful handling of the therapy depends, to some degree, upon how well he understands what is going on with respect to the patient's illness.

However, before the patient enters a therapeutic relationship if, indeed, he does at all, he is often interviewed with the sole purpose of obtaining information about the dynamics of the patient's problem. In this type of interview situation the important thing is not that the patient arrives at an understanding of himself, as he must do in the therapeutic interview. The objective of the diagnostic interview in this case is to give the diagnostician

as complete and accurate a picture of the patient as possible and usually in a relatively short period of time. While the psychotherapist is likely to balk at directly approaching the patient with a threatening question or stimulus because it may disturb the process of therapy, the diagnostic interview allows greater freedom to explore with any device which will provide information to the examiner even if it tells the interviewee nothing. Moreover, some research on the reliability of complex evaluations based upon the interview has suggested that such evaluations may be remarkably reliable. For example, Newman, Bobbitt, and Cameron (1946) have presented high reliabilities for interview ratings on the psychiatric suitability of officer candidates for the Navy. Although previous studies had produced rather discouraging results, Newman, Bobbitt, and Cameron were able to demonstrate substantial observer agreement with product moment correlations ranging from .83 to .88. A great deal more work needs to be and is being done on the reliability of clinical judgments.

In the field of employment selection, investigators have studied the agreement among interviewers in their judgments of job candidates. Bingham and Moore (1941) describe an experiment in which a wide range of opinion was found among 23 interviewers with respect to any one applicant. In this study interviewers also differed in the extent to which they conformed to the group's opinion as a whole. In the clinical diagnostic field, Murray (1938) has studied the reliability of and agreement among interviewers in personality evaluation. The data suggest differences in skill or in frames of reference between clinicians but fair agreement when the over-all group averages are considered.

Some workers have suggested standardizing the interview so that the ratings of different examiners or the same examiner from person to person will be more comparable. This is probably most feasible in military selection or in screening out desirable or undesirable candidates for employment. Hovland and Wonderlic (1939) have shown that for employee selection the standardized interview gives higher agreement between the interviewers than ordinary methods. Actually the standardized interview begins to approximate a psychological test. The stress interview is a special kind of standardized technique in which the applicant is observed under unusual interview conditions which induce emotional behavior. This technique has been studied by Freeman and others (1942). It lacks usefulness for most clinical situations which have to some extent a partial aim of therapy or in which it is undesirable to upset the patient lest he be driven away or become overguarded in his replies.

Some clinicians have recommended what has been called a nondirective approach to diagnostic and therapeutic interviews. The interviewer avoids leading or directing the patient's discussion. Through sympathetic responsiveness and the uncritical verbal reflection of the patient's feelings, he

encourages the patient to go deeper into his problem. Rogers (1942) has suggested that in this manner information is forthcoming as readily as in the questioning technique, if not more so, because of the accepting aspects of the client-counselor relationship. He points out that the patient is likely to be threatened by direct questions and to respond by erecting new defenses. Most therapists, seeking diagnostic information along with therapy, employ techniques similar in most respects to Rogers's recommendations when they are indicated, although direct probing may be encouraged by many under some circumstances. Thorne (1944), McKinney (1948), and others have urged a more directive approach where it is not contraindicated.

Used with case-history and test data the interview may enable us to make accurate guesses about the capacities of the patient, his motive systems and sources of conflict, and the kinds of mechanisms he relies on to deal with anxiety-producing situations. But we are faced with the same problems in the interpretation of the meaning of the interview observations as we noted in discussing the case history. The point of view of the clinician with regard to psychodynamic theory may greatly influence the kind of information sought, the type of interview technique used, and the way in which the individual's statements are organized and understood.

The importance of the interview to the clinical psychologist cannot be overstressed. There is no doubt that it plays the most significant role of any clinical procedure in eliciting diagnostic information about people. Even though the clinical psychologist uses diagnostic tests of all kinds and case-history data to assist him in making his evaluations, the behavior of the patient in the face-to-face diagnostic situation and the question-and-answer aspect of testing techniques all amount to a special kind of interview procedure. The clinician is really the instrument of measurement, aided to a varying degree by his testing tools.

Another point must be made. The chief means of evaluating the various tools of personality measurement which the clinical psychologist employs is the diagnostic interview. Often the adequacy of a test is evaluated in terms of whether the conclusions which are drawn from it are in agreement with the conclusions of the psychiatrist or therapist who has been interviewing the patient over a long period of time. While the therapist's judgment may be wrong, clinicians agree that there is simply no more adequate way (if the time is available) of obtaining depth information about an individual than the interview. This dependence on interviewing for testing the validity of diagnostic instruments may be in some ways unfortunate because of the subjective element in diagnosis based on the interview, but it emphasizes the great need for information about the interview technique itself as a diagnostic tool.

In addition to the use of the diagnostic interview as a test of validity of other measures, there is no doubt that what the therapist learns in the inter-

view (supplemented of course by the test data and the case history) determines what is apt to be done with a patient therapeutically. Moreover, the determination of the outcome of therapy, that is, the success of the treatment, again depends upon what can be learned from the face-to-face interview with the patient. Any set of criteria (which are badly needed) to decide what constitutes improvement in a mental illness must still depend to the greatest degree upon the results of the diagnostic interview. It must then be clear that this source of information about mental patients is really the basic source for the clinical psychologist and psychiatrist. It figures more decisively in clinical evaluation than any other single diagnostic procedure.

We have emphasized information getting in our discussion of the interview. Something should be said about the kinds of information which most typically are obtained. While it is true that, like the case history and autobiography, the interview may be, and often is, a source of information about past history, we do not really mean this as the most important kind of information that may be sought by the interview situation. This is certainly the case in the field of clinical psychology and less so, for example, in the area of personnel selection. We are really less interested in what happened at some particular time than in the attitudes of the patient to these events in his life. The accuracy or inaccuracy of the patient's report is only important in so far as it gives us some insight into the interpretation of the experience, for it is this interpretation that determines his behavior rather than the event itself. By noting, in the face-to-face situation, what the patient avoids in his discussion, what he believes, and what his emotional reaction to the material is, a great deal of information may be derived concerning his motivations and his ego-defense mechanisms.

A simple illustration, the likes of which will be familiar to any therapist, might be in order here. One of the authors had occasion to see a student who arrived in his office with the complaint that he could not seem to get any pleasure out of his studies. In the course of the interview he explained that he was particularly pained about this because in high school studying was a great source of satisfaction to him. Now it was all he could do to force himself to sit down and read his textbooks. Later in the hour he further elaborated, by way of illustrating what he could really do academically, that for a while in high school he had been doing very poorly. He became ashamed of himself, suddenly made a very intensive effort at studying, and by dint of extraordinary effort pulled his average up to the highest in his class. "Of course," he added, "I nearly got a nervous breakdown doing it."

Seeing in this statement and in other material which came out in the interview the possible recognition of the true state of affairs (that this student really did not enjoy studying but was being pushed very hard to be intellectually successful by his mother and by his strong feelings of inadequacy),

the author responded, "Then you really never did enjoy studying, inasmuch as it was such a great effort for you in high school." The student's response to this interpretation was most vehement. "Oh," he said, "but I loved to study. It's just that *now* I can't seem to get any pleasure out of it."

It became clear from this interview that the student was not realistically perceiving his motivation to study in high school or college. It was too important to him to believe that he was intellectual, just like his self-taught mother whose intellectual virtues he extolled for about 15 minutes. He could not yet afford to recognize that he had been able to work in high school only with the exertion of tremendous effort, almost to the point of the development of a nervous breakdown (viz., "I nearly got a nervous breakdown doing it"). The diagnostic aspect of the interview produced mainly some information about the student's motivations, sources of anxiety, and defense mechanisms. It hardly produced a realistic picture of his high-school experience with studying, if we were to take his descriptions completely at face value. This is where the diagnostic interview shines—in giving us a picture (by inference from verbal inconsistencies, etc.) of the individual's personality dynamics rather than factual data about his previous experience.

The literature on the use of the interview is voluminous, and it is not our purpose to review it here. A few sources will be mentioned so that the problems of interviewing may be looked into more fully. Neely (1938) has discussed the sources of error in interviewing. The securing of rapport with the patient has been considered by Symonds (1938). Bingham (1939) discusses the halo effect in personnel evaluation. Other writers about the subject have been Garrett (1942, 1945), Young (1935), Oldfield (1941), Fenton (1943), Darley (1946), Watson (1949A), MacFarlane (1943), Covner (1944), Strang (1937), Whitehorn (1944), and Cobb (1944). These are more or less traditional discussions of interviewing techniques. There are many more not mentioned including, of course, those publications which emphasize mainly the therapeutic side of the interview situation.

Tests. In Chap. 1 we traced the history of clinical psychology which included some of the major developments in psychological testing. Since the beginning of the twentieth century, the administration and interpretation of psychological tests of all kinds have been identified by many as the exclusive or at least main functions of the clinical psychologist. This unfortunate emphasis was a natural one, since many psychologists have tended to overstress the value of tests. Psychologists have been mainly responsible for their development and popularization. The advantages of testing have certainly been oversold to the public and, apparently, even among many psychologists. It is much easier to tag a person with a number which represents some score on a test than to really attempt a thoroughgoing analysis of him. The fact that a test may provide the examiner with an objective score seems to have blinded many psychologists to the fact that it may tell him irrelevant

things about the patient, give him virtually no information about him at all, or provide measurements which he is not able to evaluate properly.

Despite their limitations, tests do provide data which are important and which often cannot be obtained in any other way. The skillful clinical psychologist may find them valuable because he understands their advantages and limitations. He knows the research that has been done with them. He recognizes that they are only one source of information which must be interpreted in the light of other evidence.

It is not our purpose here to imitate a textbook on psychological testing. Satisfactory jobs have been done by many authors such as Cronbach (1949), Goodenough (1949), Greene (1941), Mursell (1949), Freeman (1950), and others. However, since some of the basic principles of testing are so important to many of our later discussions, we will review the ones which are indispensable to an understanding of the task of the clinical psychologist.

Characteristics of Tests. If we wanted to know how much information a man has, we might ask him a number of questions, such as, "Who is president of the United States?" or, "What is the equator?" The answers we would get from our series of questions would tell us very little by themselves. What we usually want to know is how much does this man know compared with other men. We may wish to compare him with men of a certain age range, or with a given amount of education, or with men who have sustained injuries to their brains. In any case, knowing how much absolute information he has is of no value unless we can relate it to some standard. Therefore, it is also necessary to find out about the amount of information the other men with the specified characteristics have.

To Jones we might put the question, "What are diamonds made of?" We might ask Smith, "What is the capital city of Afghanistan?" We next observe that Jones does better than Smith, and we might conclude that he has more information. If we are clinicians of wide experience, we can call upon our memory of conversations with other people and note that Jones appears to have more information than Smith but less than about one-quarter of the others. By now the acute reader has begun to see some of the basic reasons why we use standardized tests. In the first place the question we asked Jones was a great deal easier than the one we put to Smith. In this case the discrepancy is obvious, but in other instances we might not be able to make an accurate guess without empirically determining the difficulty of the questions. If we try the same items on everyone, we might do better. However, then we run into the problem of finding questions which do not favor one man over another because of his occupation or specialized education. We may have relied on our memory to tell us where Jones stood on information with respect to other men. But our memory is fallible, and our experience is limited. Consequently we need standards which we can

always refer to in making statements about our subject's standing in a group. These standards are called "norms."

Just as our memory is limited, our judgment is subject to bias. Since our estimate of Jones's level of information was a subjective one, if we did not like Jones's manner we might unwittingly think less of him and rate him lower than we ought to. The element of subjectivity is therefore a source of error in our clinical evaluation of people. One way to eliminate this bias is to use objective tests which reduce or eliminate subjective judgment in scoring. However, because these kinds of tests are often not the most fruitful for gaining information about the person's personality, it is possible to use tests in which the subjective element is present but can be measured. For example, we can measure how much agreement there is between several clinicians' interpretations of subjective-test performance. We might call this way of assessing a test's objectivity "observer reliability."

If one considers the points we have just made, he will understand the reasons for many of the characteristics of modern psychological tests. Tests are in a sense standardized interviews which allow us to measure characteristics about individuals with reference to other comparable persons. They are given under similar conditions; the items given to each subject are identical or equivalent; and data showing how large numbers of other people do on the items enable us to place the individual among others without dependence upon memory. They are objective in the sense that the biases of the scorer play little or no part in the results.

Test Reliability. The single administration of a test of anything at all is one sample of an individual's performance on that characteristic. If this measurement were repeated on other occasions, we would arrive at a different score for the same attribute each time. This variation results from accidental factors and inaccuracies of measurement of many kinds. These errors are found in all measurements, and with our technology we are often able to reduce them greatly. The maker of a scale to measure weights for chemical analysis must tolerate less error than the producer of household bathroom scales.

In the administration of a single test of any kind, we need to know how much the score we have in hand deviates from the individual's true score. If we give the test 10 times to the same person and obtain 10 different values, which of these 10 scores should we accept as the correct measure? The best guess, of course, is the average of all 10. We rarely have the opportunity to test the individual often enough to make this judgment empirically. But we can obtain information experimentally concerning the variation that we would expect to find in repeated measurements with that test on large numbers of people. There are a number of procedures by which such information can be derived, and there are several kinds of statistics to represent it. Most commonly the measure used to express the amount of variation

expected from a repeated performance of the same test is called "reliability." This represents the correlation coefficient between two administrations of the same test, equivalent forms of the test, or equivalent halves of the test corrected for the reduction in length. Another measure which is frequently used is the "standard error of estimate" which defines the estimated limits of variation of a person's scores on a second administration, expressed in terms of probability, and predicted from his first test score. In order to make accurate estimates of a person's true score, the reliability of the test must be high and the standard error of estimate, low. Otherwise, interpretations of the individual's score are hazardous and may actually give the wrong information If the test is unreliable, then today the subject will be at the top end of the distribution of competing individuals, and tomorrow he may fall near the bottom. Therefore, whether we said he was high or low in some capacity would depend upon which day we tested him. This is clearly an undesirable state. High reliability is an essential characteristic of tests of any kind.

Test Validity. It is affirming the obvious to say that to be useful a test must measure what it is supposed to. If a test is reliable, we know it measures something consistently even if we cannot say what it is. A test is *valid* if we have evidence that it measures some specified variable. We must be able to show that a test of aptitude for college work, for example, administered to college freshmen really allows us to predict with reasonable accuracy how students will do in their later academic work.

As in the case of reliability, there are measures which allow us to quantify the degree of *validity* in a test, that is, the level of accuracy of our predictions. High validity coefficients (correlations between the test score and performance on the function to be predicted) result in small errors in predicting. The degree of error which we will tolerate depends upon the purpose for which the test is designed. This amount of error of prediction determines the confidence we can place in our interpretations.

Many clinical psychologists are using tests about whose reliability and validity little is known. Interpretations are being made which are not warranted by the reliability and validity of the instrument. As we shall see later, such information is still needed for many of our most popular tools of measurement. It is often forgotten also that the other sources of information which we have discussed—the interview and the case history—have characteristics which make them similar in some ways to tests. The problems of measurement we have mentioned apply equally well to them just as these problems are relevant to measurements of blood pressure, basal metabolic rate, the weight of some chemical compound, or the thickness of a hair. It is essential that anyone who uses measurements of any kind to predict something else should be familiar with the requirements of tests. Reliability and its ramifications, validity, objectivity, sampling, standardization, the role of motivation

in performance, and other concepts and problems in testing must be thoroughly understood. In our discussion we have barely scratched the surface of this field.

Qualitative Test Data. It must also be pointed out that quantitative measurements are not the only source of information to be derived from psychological tests. The expert clinician is a master at observing what we often call "qualitative data." Since the individual testing situation is in reality a controlled interview, we may gain a great deal of valuable information from how the patient handles the situation. The behavior of the patient toward the examiner and the test may, in some instances, provide as accurate prediction as the patient's quantitative standing in a group (Klehr, 1949). This, of course, is subject to the experience and competence of the examiner.

Many kinds of information may be obtained through these qualitative observations. We may ask, "Is the patient fearful toward the task and anxious about his performance? Is he critical of the test and the examiner? Does he persistently qualify his answers or attempt to impress the examiner with his erudition by the use of ostentatious words? Does he make a show of outward cooperation while really attempting to cover up his attitudes?". These and other forms of behavior may prove valuable clues in understanding the patient more completely. We shall have occasion to discuss them more fully in a later chapter.

Types of Tests. Psychological tests may be classified in several ways in accordance with various characteristics. One of the most fundamental distinctions depends upon the amount of opportunity that is provided for variable responses by the subject. Tests may be designed to elicit a yes-or-no type of answer or a choice from among several alternatives which are clearly designated. The stimulus situation is nonambiguous, and the response demanded of the subject leaves little room for individual differences in personality to be expressed. These are *psychometric* or objective tests.

On the other hand, other test situations are so designed that the variability of response is very great. As a matter of fact individual differences in response are actually sought by using rather ambiguous stimulus situations. These are the *projective* tests. All tests can be placed along this continuum from psychometric to projective, depending somewhat upon the range of possible interpretations the subject may give. In the former type little more than a score which places the person on some scale with other people can be obtained. Objectivity, simplicity, economy, and easier standardization are the chief virtues of the psychometric tests. Sacrificing these virtues, the projective techniques attempt to gain more information about the person's individual way of looking at the world and dealing with his problems.

Many tests which are not usually classed as projective have projective elements. For example, one of the items on the Wechsler-Bellevue Intelligence

Scale asks what you should do if you find a sealed, addressed envelope with an uncanceled stamp on it. The question is constructed so that it allows one subject to specify that he would put it in a mailbox immediately. A different subject, however, might make sure to point out the stupidity of the person who lost it and add that any fool would know that the expected answer was to mail it. If the same question were administered in a multiple-choice form containing printed alternatives, the interesting personality differences between these two people would have been obscured. Their quantitative score on this comprehension item, however, would have been the same. More will be said about the projective tests later, since they are extremely useful to the clinician who focuses most of his attention on these personality characteristics.

There are many other ways of classifying tests. They may be classed in accordance with the *kind of process* they attempt to measure. From this point of view there are tests of general intelligence, special aptitudes, interests and attitudes, and personality. Moreover, they may be categorized by the *types of items* they contain. For example, some tests emphasize the manipulation of words, and others are primarily nonverbal, dealing with form boards, geometric forms, and designs. These are often called "performance tests." Sometimes tests must be administered by the use of pantomime to subjects who cannot understand the language. These kinds of tests are called "nonlanguage tests." In addition, tests may be classified according to their *mode of administration,* as in the case of individual and group tests. Finally, tests that are timed and place a premium on speed are called "speed tests," while those in which speed is not a factor may be called "power tests."

DIAGNOSIS

We have said that a great deal of information is required to draw accurate hypotheses concerning the basis of a patient's problem. This information is derived from the case history, observations during interview situations, and from the interpretation of various test data. Having compiled the available facts, the task before the clinician is to organize them so that they tell a meaningful and accurate story about the personality development of the patient. The psychologist must call upon all the behavior theory and experience at his disposal to decide what the basis of the trouble is and what predictions can be made concerning the course of the illness. He must make the appropriate therapeutic decisions. In addition, he must consider what this case can add to his understanding of personality and the behavior disorders. This job of evaluation has usually been called "diagnosis."

Diagnosis According to Classification. Many people have been accustomed to think of diagnosis as the process of attaching an appropriate label of some sort to the patient. There are still many clinical psychologists who appear to be satisfied with statements such as, this patient is schizophrenic, paranoid,

hysterical, and so on. These clinicians may be particularly gratified when the psychiatrist or hospital staff is in agreement that this tag fits the patient Under certain circumstances this labeling may be useful. For example, the neurologist who diagnoses a group of symptoms as a benign tumor located in a particular brain area is giving the information which is necessary to establish the form of therapy required, With this diagnosis a neurosurgeon can be called in to operate with little delay. Even if the diagnosis did not establish specifically how the tumor developed, it has established what symptomatology the patient has, what kind of condition is present, and it enables us to take appropriate therapeutic action.

The act of labeling for the clinical psychologist is not so satisfying as it is in the case of the physician just mentioned. It is often more like the use of the term "allergy" which we have noted in an earlier chapter. It does not often give us the precise information we need to choose a therapy. Nor does it give us a reliable picture of the etiology of the problem. It does give us, however, a rough description of the patient's symptoms and allows us to class the patient together with superficially similar types of patients. Giving the patient a tag is actually as useful as the adequacy of our system of classification of symptoms. This adequacy depends upon the correlation of these symptoms with etiological theory and the outlook of therapy. For example, if the etiology of schizophrenia were associated with some particular physiological or psychological conditions, it would be extremely useful to label people as schizophrenic or nonschizophrenic. Or, if insulin treatment was clearly effective with this type of patient but electric shock was not, then the values of such a classification diagnosis would be great.

The classification system for mental disorders, developed by Kraepelin, has changed little in half a century. Classification is one of the first steps in scientific progress, and as such, Kraepelin's scheme based on symptoms was a valuable one. But we have learned painfully that this scheme does not enable us to predict much about the patient or to understand his disorder. Patients labeled as psychopaths in one hospital are called schizophrenics in another. In fact, so rarely is a pure example of any one type found that, if it is, clinical psychologists are inclined to enthuse about it to everyone who can appreciate it. A case which is not a mixture of symptoms from several classes of disorders is the exception. The obsessive-compulsive often has symptoms or ways of behaving that make him difficult to distinguish from the hysteric. The schizophrenic who shows catatonic behavior may also turn out to have paranoid delusions. A woman with a hysterical personality may, on more careful neurological examination, prove to have organic brain damage as well.

The problem is further complicated by the fact that, even in cases where the symptoms appear similar, there is no certainty that the problem arose from similar backgrounds. This means that type of symptom is not necessarily related to the etiology of the disorder. In fact, in some instances it is possible

that the classification we are using may confuse rather than help us. In putting together all schizophrenics in one class, we may be treating as one disease cases of chemical disorder as well as patients with basically different psychological mechanisms. Only better understanding of the behavior disorders will produce a more useful classification.

Diagnosis According to Dynamics. It should be clear to the reader that the way in which information about the patient is organized and interpreted depends on our knowledge and our theories about personality and the behavior disorders. It is impossible at the present time to provide a blueprint for the evaluation of the clinical dynamics of any individual case. There are a number of kinds of questions, however, that may be answered. Problems concerning diagnosis by personality dynamics may be divided for convenience into three general areas: the study of the capacity, the motive systems and conflicts, and the characteristic mechanisms of the patient. From the clinician's point of view the patient can be described by a combination of these areas. The practicing clinician is satisfied with describing the patient in this way. As a personality theorist, he asks the additional question, "How did he develop as he did?"

Capacity. There are a large number of instances in diagnostic work in which the capacity of the patient is an important factor in his adjustment. Perhaps the most obvious example is the case of the school-age child who is struggling to keep up with classroom work which is too much for his limited intellectual equipment. Compensatory problem behavior at school may be one way in which the child might deal with the constant frustration which often goes unrecognized by his teachers. Proper grade or school placement following the appropriate diagnosis could go a long way in relieving the behavior problem. Very often the type of environment in which a person lives will make impossible intellectual demands upon him which result in symptomatic behavior of various kinds. Recognition of this is necessary to make the correct therapeutic decisions.

In vocational guidance, in college counseling, and in making decisions concerning a patient's ability to profit from psychotherapy or to adjust to the demands of his environment, a knowledge of the over-all or specific capacity of the individual may prove indispensable for correct diagnosis and therapy. Because of its importance in understanding and treating behavior disorders, capacity is measured almost routinely by agencies doing clinical diagnosis.

Since so many effective tests of intelligence are available, they are most frequently used when an estimate of intellectual capacity is needed. However, although tests of capacity are quantified, standardized, and generally more accurate, rough estimates can be made from case-history and interview data. The type of job the patient holds, his level of education, academic grades, and the careers of his parents are all valuable cues to his intellectual level.

Moreover, his language in conversation, alertness, judgment, and the information that appears to be at his disposal add evidence which may be helpful.

In recent years interest has shifted somewhat from global estimates of capacity to tests which provide separate measures of different kinds of ability in the same individual. Diagnostic intelligence tests have been developed. These tests are used to identify the kind of neurotic or psychotic process in a patient by studying his loss of intellectual efficiency as a result of the illness. The Wechsler-Bellevue Intelligence Scale for Adults is an excellent case in point. The clinical observation may be made, for example, that the hysterical patient shows a tendency to be naïve. This naïveté is often found to be reflected in a relatively low score on the information subtest of the Bellevue scale. Coupled with other evidence from the patterning of the 10 subtests of the intelligence scale, the clinician may then attempt to diagnose patients as hysterical who show the intellectual signs of this neurosis. More than a label may be involved here, since statements can be made about the patient's manner of dealing with the different intellectual functions on the test. The use of intelligence tests in dagnosis will be discussed in a later chapter.

Motive Systems and Conflict. The concept "motive" is a psychological construct, since it is something we can infer only from its effects on behavior. Relatively little research has been done in this very basic area of psychological problems because it is an extremely difficult field to attack experimentally. Clinical psychologists generally take as a working assumption that most behavior is motivated. This means that, when we act, there are tensions or forces which impel us into this action. Furthermore, sound evidence indicates that the type of action needed to reduce or eliminate these tensions is learned. Motives are complex things which appear to have both physiological and social aspects.

While different theoretical systems conceptualize personality and its development in different ways, the scheme of motivation is central to all those which have been clinically useful. The psychoanalysts talk about instinctual impulses which are identified as constituting the *id*. These impulses come into conflict with various social pressures. H. A. Murray (1938) uses the term "need" to refer to the tension which produces human activity and "press" to refer to the environmental pressures which facilitate or obstruct need satisfaction. Lewin (1935) speaks of "forces" to mean something comparable to motivation. These are merely different ways of describing the role of motives in behavior. Some theories stress unconscious motives.

Since motives can only be inferred, the task of the psychologist who attempts to identify them is not simple. His manner of describing them is usually in accordance with the theoretical system by which he views personality. For example, Murray lists a large number of needs, such as needs for achievement, succorance, aggression, etc. The psychoanalytic system revolves around sexuality as the basic urge. Alfred Adler (1923) views neurotic symptoms as

organized around the "will to power." We shall discuss the different approaches to personality in another chapter. Whatever the theoretical system, however, the problem in diagnosis is the identification of the motives which are involved in the problem behavior. Motivational conflict is thought of by all clinicians as the basis of neurotic symptoms and misery.

Characteristic Mechanisms. The clinical psychologist knows that people respond to motives in learned ways which help to reduce the tension. The particular manner in which a patient adjusts to frustrations and conflicts has been called an "adjustment mechanism." The unattractive girl who is thwarted in her desires to be loved may substitute scholastic brilliance as a means of satisfaction. A different girl with a similar problem may seek illicit sexual relations in her efforts to satisfy frustrated needs. These patterns or styles of life may be in themselves sources of additional difficulty and conflict. Experience with many people has led to the formation of descriptive generalizations about these mechanisms. Since common mechanisms may be found in most people, it has been helpful to give them names. Projection, rationalization, and identification are some of the terms used to identify these ways of responding to conflict situations.

It is clear that simply discovering the conflicts in motives which are responsible for a person's activity is scarcely enough to understand his predicament. We must also attempt to find out the way he has learned to deal with them. Does he resort to ailment to avoid threatening experiences? Does he insulate himself from emotional experiences to protect himself from the dangers which he has learned to associate with them? Does he rationalize his defeats or project his inadequacies on others? Does he have a tendency to select one of these mechanisms as a preferred way of adjusting? The answers to these and other questions provide a more complete description of the patient's dynamics. It is a much more useful kind of diagnosis than simply classifying him as hypomanic or depressive.

This search for information about the patient's needs, the frustrations he faces, and the manner in which he has learned to react to them provides us with important leads into the etiology of his disorder. As we have pointed out earlier, it is not enough to show sequences of events in an individual case. If we are going to say some day that such and such conditions produce the following malady or personality pattern, it is necessary that we constantly compare these individual data with the information from countless other cases. In doing this, we may observe that X's mother encouraged her son to be completely dependent upon her. In addition, she continually frightened him concerning the dangers of evil and self-seeking women. Intuitively perhaps we think, "No wonder X failed to make a satisfactory marital adjustment." But what about case Y? Coming from a similar background, his adjustment proved successful. We realize that we must look for other features in the situation of both individuals to understand what happened.

It has been said that personality theorists have been too much influenced by the abnormal field and know too little about the "normal" personality. Because Freud found Oedipal problems in many of his patients, he was led to generalize about Oedipal problems in all people. But the question continually plagues us, "Why does one person come through these dangers successfully and another not?" Studying one case or even several cases is scarcely enough to provide the answers. One case yields hypotheses which need constant revision in the light of more evidence. In the analysis of the patient who enters the clinic, our problem is to systematically explore his motivations and mechanisms in the light of our ever improving theory and increasing experience.

PROGNOSIS AND THERAPY

We have said that diagnosis serves the functions of identifying the difficulties of the patient, evaluating their development, and noting the manner in which the patient copes with them. We have pointed out that our conclusions are really hypotheses based on the best knowledge available to us and that these conclusions must be derived in the light of scientific theory. Finally, we pointed out that the diagnostic story should enable us to make appropriate decisions about the treatment of the behavior disorder.

In order to make intelligent decisions about the treatment of patients with different diagnoses, we need to be able to predict what the course of the illness is likely to be under different treatment methods. As we pointed out in the first chapter, our knowledge is not reliable enough to make more than educated guesses. At the present we rely mostly on authority, tentative theory, and limited personal experience to guide our decisions in prognosis and therapy. Some percentage of patients in mental hospitals appear to get well enough to go home without formal treatment. It becomes impossible, therefore, to evaluate the effect of therapy without careful scientific procedures. The question of prognosis in therapy remains an open one of very great importance. In both these areas, prognosis and treatment, the challenge to the inquisitive clinical scientist is very great.

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CHAPTER 4

INTELLIGENCE AND ITS MEASUREMENT

We have seen the important role played by the development of intelligence testing in stimulating the growth of the early psychological clinic. In the last chapter we talked about the value of having an estimate of a patient's intelligence when we are trying to do a thorough job of diagnosis. We are now prepared to look into the theoretical and practical side of the measurement of intelligence a little more carefully. The student who wishes to have a thorough grasp of this field will have to supplement his reading with one or more of the many source books and texts which cover the measurement of intellectual capacity.

THE NATURE OF INTELLIGENCE

The beginning student will discover through his readings that there are many definitions of intelligence. This is apt to be perplexing to him. Most laymen are satisfied that they understand the meaning of the term. In our everyday conversation, we continually hear statements like, "He's not very bright," or "Any normally intelligent person can see . . .," and so on. Our working ideas about intelligence seem to make sense, and so we may not worry about the technical problem of definition. However, there is considerable confusion among psychologists over the question of the definition and nature of intellectual capacity. Some disagreement exists over what is being measured and what should be measured by our well-established intelligence tests.

In our discussion of the historical development of testing, we said that the measurement of intelligence did not become popular until emphasis had shifted from the simple reaction-time and sensory-motor tests of Galton to the complex types of tasks of Binet. Galton and Cattell, who were theoretically oriented, believed that their tests measured the basic units of mental capacity. On the other hand, Binet faced the practical problem of differentiating between defective children and those who were lazy. As we have seen, it eventually became apparent that the sensory-motor tests would not do what was expected of them, *i.e.*, correlate well with academic success. However, the

Binet type of test proved immediately useful; and while Binet's procedures did not take hold in this country right away, they eventually became the core of the great testing movement later on. The Binet tests were useful because they succeeded in differentiating between children of various age and grade levels and made possible the prediction of the child's progress in school.

Though Binet's theoretical approach was vague and not formally worked out, it was a global one. He assumed that intelligence was a single general attribute. Most of the people who measured intellectual capacity after Binet were clinicians. They were interested in measures that worked because they were dealing with children or adults in the clinic or school system. The global concept of intelligence seemed to be successful and became firmly established in the succeeding years.

Definitions. Let us look at some of the definitions of intelligence that have been proposed. Freeman (1950) classifies these definitions into four types. The first places its emphasis on the adjustment or *adaptation* of the person to his total environment or aspects of it. In 1914, for example, Stern wrote, "Intelligence is a general capacity of the individual consciously to adjust his thinking to new requirements."

The second type of definition discussed by Freeman stresses *learning ability* as the important feature in intelligence. The idea of intelligence being characterized by learning ability or related to it has interested a number of investigators. The problem is complicated by the fact that intelligence scores are not really independent of learning. Nevertheless investigators have correlated rate of learning with intelligence test scores. In virtually all these studies the relationship has been positive. Depending upon the type of material to be learned, the correlations range from 0 to .80. Multiple correlations between intelligence and several learning tasks tend to be higher than the single-order correlations. This sort of work has allowed us to say that, depending upon the material, a positive relationship exists between intelligence and ability to learn. What the true relationships are we cannot legitimately say because of the extreme range of correlations found.

A third type of definition of intelligence has stressed the ability to carry on *abstract thinking*. Terman's (1921, p. 128) definition is a good example of this kind of concept. He writes, "An individual is intelligent in proportion as he is able to carry on abstract thinking." In this connection it is interesting to note that studies comparing intelligence test scores with problem-solving tasks which involve abstract relations, reasoning tasks, and inference situations have correlated little better, on the whole, with intelligence than the simple learning of verbal material and perceptual-motor skills. Our current intelligence tests stress abstract concepts of intelligence.

Finally, there is a class of definitions that attempts to be broader in scope than any of the foregoing ones. These definitions are more *comprehensive* in the sense that they combine and enlarge the other three types of definitions.

For example, Wechsler (1944) states that "intelligence is the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment." Stoddard (1943) maintains that "intelligence is the ability to undertake activities that are characterized by (1) difficulty, (2) complexity, (3) abstractness, (4) economy, (5) adaptiveness to a goal, (6) social value, (7) the emergence of originals, and to maintain such activities under conditions that demand a concentration of energy and a resistance to emotional forces."

In examining this sample of definitions which have been published by well-known psychological scholars, several questions arise. In the first place it is clear that the tests we have available do not measure all the aspects that have been attributed to intelligence by these definitions. It has been pointed out again and again by clinicians like Doll (1941), Sarason (1949), Jastak (1934), and others that two feeble-minded children with the same score on the Stanford-Binet may behave quite differently with regard to social effectiveness. It is not always possible to decide whether these children should be institutionalized on the basis of the IQ alone. Therefore, the section in Wechsler's definition of intelligence which deals with ability to "deal effectively with his environment" does not apply to the measurements derived from our most useful intelligence tests. This example of the void between definitions of intelligence and its actual measurement can be multiplied many times.

How, then, do most of the definitions of intelligence come into being? In part they are based on a collection of armchair ideas resulting from the observations of people inside and out of the psychological clinic. They also arise from inspection of what intelligence test scores actually predict. In any case they do not really define the nature of the mental organization. They more or less identify what the intelligent person can and cannot do with a variety of problem situations. The definitions are logical and descriptive statements which are often stated in such a way that it is difficult to have any idea of how the kind of intelligence specified can be measured. Examine the definition given by Munn (1946) in his introductory textbook on psychology. He writes, "Intelligence is flexibility or versatility in the use of symbolic processes." But what Munn means by the words flexibility and versatility is not made very clear.

When we examine the definitions of intelligence discussed above, we notice that they assume that intelligence is some kind of general attribute more or less of which exists in everyone and which determines how any individual will be able to deal with various kinds of problem situations. This global concept has been extremely popular because it has been so successful in a practical sense. Most of our best tests still give us single estimates of intelligence. However, this sort of assumption leaves no room for postulating that a number of independent capacities make up the mental organization and

that the same individual may have a high capacity for one type of function but a poor capacity for another. We shall see that this is exactly what has been proposed by some present-day theorists. In the following sections we shall discuss the main theoretical points of view which have been held concerning the nature of intelligence. (See also the *Journal of Educational Psychology,* 1921, Vol. XII, Intelligence and its measurement: A symposium.)

Faculty Psychology. We have stated in the historical introduction that, in the eighteenth and nineteenth centuries, considerable interest was awakening in the problems of mental deficiency. The philosophers had already written and speculated a great deal concerning the nature of the intellect. The elemental unit of the mental organization was thought of as sensations which by combination and association were organized into perceptions. These perceptions could be still further elaborated and generalized into concepts. The function of the intellect was considered to be the building of perceptions out of sensations and the construction of conceptions from perceptions.

To accomplish its abstract function, the mind had at its disposal a number of "faculties" such as memory, judgment, attention, reasoning, imagination, etc. These faculties were thought to be like muscles which could be developed by exercise. For example, if a man exercised his faculty of judgment on one problem, the effect of this practice would be to improve his judgment for any other kind of problem. This elaboration of the idea of mental faculties was called the doctrine of "formal discipline," and it influenced education almost up to the present time.

In the early twentieth century Thorndike and Woodworth did the most to eliminate the doctrine of formal discipline from sophisticated thinking by their experiments on transfer of training. But the conceptions of faculty psychology remained a strong influence on theoretical thinking. This influence was one of the reasons that the sensory-motor tests resisted for a long time the European preference for measuring more complex functions in predicting intelligence. The sensory-motor test appeared to many psychologists as the atom (or basic unit) of the mental faculty through which the process of organization of sensations and perceptions could be studied. The theory of faculties was quite incompatible with the concept of general intelligence which was to follow.

The Two-factor Theory. In 1904 Spearman published his first analysis of intelligence. This work was essentially statistical in nature and was further elaborated and revised in *The abilities of man* (1927). Spearman believed that all intellectual activity contained some element or factor in common. This *G,* or general factor, was postulated to be important in every mental act, although some acts were thought to depend upon it more than others. The difference between people in intelligence was a matter of how much *G* they possessed. This general factor Spearman called "mental energy." The

variation in measured intelligence that was not explainable in terms of this general factor was attributed by Spearman to specific factors, or *S*. There were many different specific factors. Those which occurred in a large number of different acts of a particular type, but not all of them, were called group factors. Not only did individuals differ in the strength of the *G* factor, and therefore in their amount of intelligence, but they also had different kinds and amounts of *S* factors. Because of this, there were great individual differences in the patterns of ability. Two people of the same general intellectual level might be found to have very different talents and deficiencies. But the important thing for Spearman was how much of this general factor they had.

Spearman's analysis of intelligence was actually an interpretation of certain observations which anyone can make. The theory grew out of the observation that there are correlations between the various measurements of intellectual performance. If a large series of different kinds of intelligence test items like memory, reasoning, perceiving relationships, etc., were given to many people, all the intercorrelations for this series of tests could be arranged in what is called a "correlation matrix." This is simply a table of intercorrelations such as the one in Table 3. Using a statistical method of his own invention, the

TABLE 3 INTERCORRELATIONS OF SUBTESTS*

Subtests	1	2	3	4	5	6	7
1. Analogies	..	.50	.49	.55	.49	.45	.45
2. Completion	.50	...	.54	.47	.50	.38	.34
3. Understanding paragraphs	.49	.54	..	.49	39	.44	.35
4. Opposites	.55	.47	49	.	.41	.32	.35
5. Instructions	.49	.28	.39	.41	.	.32	.40
6. Resemblances	.45	.38	.44	.32	.32	..	.35
7 Inferences	48	.34	.35	.35	.40	.35	

* From Spearman, C. *The abilities of man.* New York: The Macmillan Company, 1927. P. 149. By permission of the publishers.

tetrad-difference method, Spearman claimed that he could account for the largest part of the intercorrelations among the tests by one common factor. His early work with the tetrad-difference technique for testing the independence of correlations led to the formulation of the two-factor theory of intelligence.

The Multifactor Theory. One of the sharpest critics of Spearman's two-factor theory was E. L. Thorndike (1926). Thorndike believed that the intercorrelations studied by Spearman were often too small to test the question of a common factor. Moreover, he disagreed with Spearman in his interpreta-

tion of the existing observations. He objected very strongly to the idea of the existence of a characteristic such as general intelligence. Instead of one kind of factor, he maintained that there are a large number of separate characteristics which make up intelligence. He argued that there is no generality to intelligence, but rather communality in the acts that people perform. The common element does not reside in the individual but in the nature of the tasks themselves. People differ in their ability to perform any specific act, that is, in terms of the level of difficulty they can manage. They also differ in the range or number of tasks they can perform. For Thorndike, intelligence was more like a series of skills or talents. Several or many tasks may call for the same kind of ability. The correlations between various tests are the result of the fact that the tests have features in common with each other even though they are called measures of different things.

At first glance Thorndike's theory appears to be a thoroughly atomistic one. Intelligence is said to be composed of a large number of separate factors or elements. There is no general intelligence but very specific acts. The number of these depends upon how broad or narrow a classification one can or wants to make. However, some tasks have so many elements in common that it is desirable to classify them into groups. We could classify tasks into such categories as arithmetical reasoning, visual perception, word meaning, etc. Despite the atomistic theoretical approach, Thorndike has actually seen fit to classify intellectual activity into three broad types: social intelligence, concrete intelligence, and abstract intelligence. Notice that this is a classification of types of tasks and not an analysis of the mental organization itself. For Thorndike the mental organization consists of a multitude of simple intellectual acts.

We shall see later that this discrepancy of point of view between Spearman and Thorndike is basically a theoretical one and does not greatly affect what one does in the actual measurement of intelligence. The types of tasks which interested Thorndike are essentially the same as the measures which Spearman threw into his correlation matrix.

We might note that among the other critics of Spearman is G. H. Thompson (1939), who has argued that the intercorrelations between tests are the result of common samplings of independent factors. If the tests incorporate many of these independent factors in common (*i.e.*, the tests are all measuring some of the same factors), they will be highly intercorrelated and it will appear as though they are measuring one general factor. This concept is similar to Thorndike's, but unlike Thorndike, Thompson accepted the practical value of the concept of *G*.

The Factorial Approach. In about 1927, L. L. Thurstone undertook an approach to the study of intelligence which was based upon the analysis of intercorrelations between the various tests of intelligence along the lines of Spearman's earlier work. Using improved techniques of statistical analysis,

Thurstone came to vastly different conclusions from Spearman about the nature of intelligence. He published an intelligence test based on the results of his factor analysis and has continued to work along these lines up to the present time. Recently Raymond Cattell (1946) has extended the factor-analysis techniques to the study of personality. It is unnecessary to attempt an exposition of the factorial techniques here. This is a subject which is discussed at length by most major textbooks on testing and statistics. In short, the technique seeks to determine and define the minimum number of variables or factors which will account for all or most of the variation in intellectual performance.

The procedure, as in the case of Spearman's analysis, involves the presentation of large batteries of intelligence tests to large numbers of subjects. Ideally these tests should comprise all the possible types of measurements that psychologists could agree are related to intelligence. Tests which correlate highly with other tests are measuring some of the same things, while tests which have little or no relationship have nothing in common. Consequently, by the appropriate statistical analysis of the correlation matrix, it is possible to extract a number of factors or variables which have nothing in common with each other but which together account for most of the variation in intellectual performance. By inspection of the tests which have the largest amount of any particular factor (high intercorrelations), the factor analyst then attempts to give that variable a name which best describes the function measured.

The series of factors which are extracted from a correlation matrix do not all have the same importance. Some of them account for more of the variation in performance than others. The first factor which is extracted is the one which accounts for the greatest proportion of the total variability. The remaining variation is called the first residual from which a second factor is extracted, then a third, and so on until most or all of the variability is accounted for or until the residuals are not large enough to make further extraction of factors worth while.

In his writings on the subject Thurstone argued that intellectual performance was an expression of a number of factors rather than a common general factor. For him the goal of intelligence test construction should be the isolation of the primary factors and the construction of tests which measure individually each of these factors. In his earlier work (1935, 1938) Thurstone announced a number of factors which he believed made up intellectual performance. These were identified as spatial (*S*), perceptual (*P*), numerical (*N*), verbal relations (*V*), memory (*M*), word fluency (*W*), induction (*I*), reasoning (*R*), and deduction (*D*). In later studies there has been some modification of this list. In 1943, for example, Thurstone listed six factors, with induction eliminated altogether, and perceptual and deductive uncertain.

Summary and Overview. For convenience in thinking it is possible to place the three theoretical approaches to the nature of the mental organization on a continuum. At one extreme lies the atomistic view of Thorndike which stresses a large number of mental elements. These separate elements act in combination in any mental act and may seem to be general in nature because of common elements among the various intellectual tasks that people are required to do. At the other extreme is the global concept of Spearman which suggests that some general quality of the mental organization pervades every mental act even though there may be specific abilities which determine the unique quality of a particular individual's performance. And finally, between these two falls Thurstone's views that not one general factor, nor a large number of specific factors, but a small number of independent factors make up the mental process.

All three points of view begin with somewhat different assumptions about the mental organization. Consequently they reason differently about the essentially similar data which they are analyzing. From the same correlational matrix it is possible to arrive at these opposing beliefs since the data themselves do not directly answer the question. Even the tests which Thurstone designed to be measures of the independent factors of intelligence are correlated with one another, which suggests that some additional factor or factors are contained in the measures. In an effort to be eclectic it has been proposed by some that Spearman's *G* corresponds to Thurstone's first primary factor. In any case the question of the adequacy of the three theories to explain all the facts remains unsettled.

In discussing the factorial approach to intelligence it might be well to refer to some studies on the relationship of age to the intercorrelation between intellectual factors such as verbal, numerical, and spatial. Garrett (1946) presented controversial evidence that in children there appears to be more evidence of a general factor (higher intercorrelations) such as Spearman suggested, than in adulthood. Garrett writes, "The conclusion which I draw from these data is that the over-all ability (*g*) which looms large during the elementary school years becomes progressively less important at the high school and college level, where factor studies have shown it to be negligible or quite small." At the high-school and college levels, abstract intelligence appears to become dismembered into specific components or more independent factors. Later research and critical reviews of Garrett's concept essentially discredit this point of view. Failure to control such factors as task difficulty and differing variability at different age levels probably account for Garrett's finding. The dismemberment concept can probably not be adequately tested for methodological reasons, although it is an interesting attempt to bring together the Spearman and Thurstone points of view.

One of the chief limitations in the approaches discussed above concerns

the fact that the correlation matrix from which all three theories are derived depends upon what tests are included. Intelligence is what we call certain kinds of activities which we can measure only through certain kinds and samples of behavior. The tasks one includes to measure these behaviors depend upon many complex considerations, not the least of which is one's cultural frame of reference. The entire argument may tend to become circular, since the types of tests we include depend on our prior notion of what intelligence is. For example, if the correlation matrix contains no tests which depend on speed, then speed will not appear as a factor in our factor analysis. However, if we have decided in advance that speed is one of the variables our tests should measure, then it may appear as an important source of variation in our battery of tests.

The factor analysts do not claim that the number of factors is fixed or even known. This point has not always been made clear. There is no doubt that the adequacy of this type of analysis depends entirely upon the appropriateness of the measures one selects in the first place. We are always dealing with a limited sample of behavior. This fact has been the primary criticism of factor analysis. The objections do not tend to lie with the statistics but with the raw data themselves. This argument applies to all three of the theoretical approaches. Examination of the intercorrelations will not put into the formula what is not already there. It has been suggested that these limitations reduce all three of the approaches to mere conceptual models on which to pattern our thinking and that the real nature of intelligence cannot be understood by factorial methods. Few people deny, however, that such models are useful, or even at times necessary, for research into the problem of the nature of intelligence.

One way in which to judge the importance of the differences between the theoretical views concerning the nature of intelligence is to study how these points of view affect the construction of tests. Let us look at the kinds of tests advocated by the proponents of each theory.

While Thorndike sees intelligence as made up of a multitude of minute elements of ability, he recognizes that this concept is not so significant in a practical sense as the idea that many of these elements operate together in a task which requires intelligent behavior. Some of these elements may be grouped in one class because they are found in one broad kind of intellectual activity. For example, one of Thorndike's best known tests was designed to measure the ability of people to handle abstract concepts, one broad category of mental effort. The CAVD Test consists of four parts: the sentence completion (C), arithmetical reasoning (A), vocabulary (V), and following directions (D). According to Thorndike (1927) this test does not measure all the elements in abstract intelligence. The other aspects of abstract intelligence not measured directly can be estimated because of the

high correlations between performance on all abstract tasks. As we shall see, this test contains the same kinds of items that may be found in the great majority of current tests which provide some single measure of over-all intelligence. These current tests, as does the CAVD, tend to give a heavy weighting to what is called abstract intelligence. Thorndike's views in practice do not, therefore, lead to radically different types of tests than we are accustomed to use.

Since Spearman argues for a general factor of intelligence and includes in his correlation matrix the same kinds of tests that are used today in the clinic to measure intelligence, no alteration of our popular system of providing a single estimate of intellectual capacity is called for by his theoretical approach. The best test, says Spearman, is one which calls for the largest amount of the general factor, and the best test materials should therefore be those which have high intercorrelations. Each part of the test should be so thoroughly saturated with the general factor that the effects of the specific factors would be canceled out. This recommendation of Spearman tends to be the actual practice today (viz., the Stanford-Binet, whose subtests are highly intercorrelated), although many psychologists are recommending that a single estimate of intelligence be abandoned.

The extreme practical conclusion that one would draw from the assumptions of Thurstone concerning the nature of intelligence is at great odds with the implications of either Thorndike's or Spearman's theories. For the factor analyst, any single measure of intellectual capacity is inappropriate. What we should be obtaining is a profile showing the individual's performance in the various primary factors which have been established by factorial technique. Psychologists with this point of view argue that we are not justified in adding up test items correctly passed in these various functions and that a total score representing intelligence is not meaningful.

In following this orientation, Thurstone has introduced his Primary Mental Abilities Tests (1938, 1943, 1946). Even these tests embody content which is basically similar to the tests which have been constructed out of the other theoretical frames of reference. They tend to contain material which measures academic and abstract abilities. They have not proved to be especially useful to the clinician as yet, and their future in a practical sense is difficult to predict. The importance of this approach may increase with greater interest in the effects of pathology on the various kinds of intellectual functioning.

Let us now summarize the discussion of the relationship between theory and practice. We have first noted that, while differing greatly in theory, Thorndike's and Spearman's concepts led to similar types of tests with the tendency to use a single measure to express intellectual level. On the other hand, Thurstone's approach rejected the single measure of intelligence in favor of a profile, although he used the same types of tasks as were employed by Thorndike and Spearman. At the present time, what one does in the

clinic with regard to the measurement of intelligence does not depend greatly upon theoretical position. Although a number of psychologists have predicted changes in the near future, nearly all our standard tests give single measures of intellectual level. The practical value of pure factor tests (which are virtually impossible to achieve) may be in the future. The main impact of Thurstone's approach has been at the theoretical level.

In the early days of modern psychology the opinion was held that mental acts should be divided into three types: cognitive, conative, and affective. The cognitive aspect referred to the process of knowing and included only the intellectual functions. The conative side of mental acts included all aspects of motivation. The term "affective" was used to designate the emotional side of behavior. Psychology developed the tendency to study these components of behavior independently of each other, or at least, with the tendency to think of them separately. While some psychologists today are arguing that this is no longer a justifiable way to approach psychological problems, present-day thinking is still greatly influenced by this division. Although no one would ever have argued that problem-solving behavior did not require motivation, it is interesting that all our measurements attempt to isolate intelligence from its motivational component. In effect, we have been trying to study intelligence with motivation and emotions controlled.

At an early stage, in attempting to understand a very complex process, this oversimple kind of classification is often convenient. The principal objection to this way of proceeding in the study of human intelligence is that it may actually lead us to overlook the nature of the total mental act. We are gradually moving away from the extreme position that there are such things as cognitive functions which are separate and distinct from affective and motivational ones. Those psychologists who are still willing to separate cognitive from affective and conative are beginning to speak of interactions between them. Others go even further and suggest that the distinction should be dropped altogether in our thinking.

Recognition of these considerations has led a number of psychologists to talk about what have been called "nonintellective factors" in intelligence. Wechsler, in a presidential address to the Division of Clinical and Abnormal Psychology (1949), discussed some of the thinking along these lines. He pointed out that, when the correlation matrices of intelligence tests are factored, only about 60 per cent of the total variability in the test performance is ever accounted for by the factors. Moreover, factor analysts, some of them from Spearman's own laboratory, have been able to demonstrate the existence of factors which seem to be nonintellectual in nature (Spearman, 1927; Brown, 1923; Cattell, 1933; Alexander, 1935; and Wechsler, 1950). Interpreting evidence from a number of kinds of sources, Wechsler concludes that ". . . general intelligence is the function of the personality as a whole and is determined by emotion and conative factors. . ."

Writers other than Wechsler have also made this point. Goodenough (1949) has stated the problem clearly in a brief exposition of what she has called "the mathematical analysis of nonintellectual traits." She writes (p. 291),

> That such factors as self-control, level of aspiration, interest and zest in achievement, and a host of other matters by which potential abilities are either energized or constricted in their manifestations play an important part both in performance on mental tests and in the larger problems of real life is generally admitted. . . . As yet, however, work in this area has not advanced far beyond the level of single measurements; little has been done to show the organization of these non-intellectual traits either with respect to each other or—what may perhaps be more important—with respect to their integration with the abilities and achievements of the individual. Common observation indicates that a basic problem in the field of human behavior is involved in such relationships. How often do we hear such pronouncements as these: "He could if he would, but he won't make the effort." "He's not very clever, to be sure, but he never gives up till he gets there." "He is a good workman but he can't hold a job because of his bad temper." Regardless of the accuracy of the particular statements, the general principle is beyond question.

Before leaving the theoretical issues surrounding the problem of the nature of intelligence, something should be said about the classical nature-nurture question. Many different points of view have been held concerning the relative influence of hereditary and environmental factors in intellectual behavior. The question has prompted a fair amount of research, usually by the co-twin method of studying the influence of environment. In this method heredity is controlled through the use of identical twins. None of these studies has ever really settled the issue. In view of what we have said about the inappropriateness of separating the cognitive, conative, and affective side of mental performance, the question really has very little meaning. We do not strictly measure capacity with our intelligence tests. We are measuring a person's performance which is the end product of many variables. We have pointed out that motivation, personality characteristics like persistence and self-confidence, chemical factors related to metabolism, and other variables enter into the measurement of the individual's intelligence. Unless these variables are isolated in our measurement, we cannot hope to assess the role of genes or biological factors in intellectual performance. The evidence is such that one can take almost any point of view concerning the nature-nurture question.

Because of the above considerations and other questions which we have

not treated here, a great many psychologists have preferred to soft-pedal the issue of heredity and environment in intelligence. We tend to say that both hereditary and environmental variables, whose operation we do not fully understand, interact in any individual's intellectual performance. In some instances environmental circumstances may appear more important, while in others hereditary factors stand out. However, making this sort of statement, or labeling any case of mental retardation or acceleration as hereditary or environmental in nature, does not solve the problem of understanding the nature of intellectual performance. In general, the nature-nurture question has not been productive in bringing us closer to an understanding of human intelligence.

In some of the introductory texts on psychology, or in other introductory sources, the student is likely to come across a topic which is usually called the "constancy of the IQ." It has been pointed out that an individual's intelligence quotient remains stable throughout life, that is, his brightness or rate of mental growth does not change. A child who has an IQ of 120 at 10 years of age will have roughly the same IQ at 13. A great deal has been made of this point, and the impression is often gained that the IQ represents a person's inherent ability which is uninfluenced by any environmental conditions. In passing we would like to comment on this notion of the IQ's constancy.

In the first place, it should be clear by now that the IQ or any other measure of intelligence is not a measure of an individual's inherent capacity. It is considerably influenced by education and, as we have labored long to point out, by the personality of the individual. Moreover, the IQ at different ages does not have exactly the same meaning. For statistical reasons related to problems of measurement, it is more difficult to obtain an IQ of 120 at 13 or 14 years of age than it is to achieve such a score at 9 or 10.

Because of the misunderstandings wrought by the various claims about the constancy of the IQ, we believe it is necessary to point out just what is really meant by such a statement. If the IQ as a measure of mental alertness or brightness is to be useful to us, it must, of course, be reasonably stable. This is actually the case. Within reasonable limits the IQ does not vary greatly. But it does vary some, and ignorance of this fact has led people into making foolish statements. Its relative constancy, even taking account of environmental factors and the deficits of old age, is one of its chief virtues since it does make possible the consistent measurement of mental alertness throughout a good part of the life of the person. The measurement of intelligence has been one of the most useful enterprises of psychologists. From time to time researchers have claimed that chemical treatment of the feebleminded produced a change in the IQ. Others have argued that it was possible to train a person's intelligence so that the IQ would be raised. Positive

findings in some of these studies have sometimes led to the belief that the question of heredity or environment had been solved, since it was possible to change a person's intellectual level by certain physical or psychological methods.

There is no question that IQ variations will occur. These variations are a function of the nature of the measuring devices which we use to estimate ability. Some change will occur, for example, if you train children on the kinds of intellectual tasks that are found on tests like the Stanford-Binet. This does not mean, however, that we have altered the individual's basic intelligence. Moreover, psychotherapy or psychological support with children who are anxious or disturbed will often produce IQ changes which mean simply that such children have been made more effective in their performance because of the removal of crippling emotional difficulties. The attention given to such children may well act to change their confidence level or motivation to succeed at the tasks found on the tests.

Indeed, because the measurement of intellectual performance is so reliable, it becomes possible to assess the contribution of factors such as education, social conditions, senescence, etc., to intellectual performance. The vulnerability of these intelligence measures to the effects of personality and social variables need not be looked upon as a liability. Intelligence measurement offers a means of studying the relationship of cognitive performance to emotional and motivational conditions.

Aside from the theoretical interest in the nature of intellectual behavior, the clinician is concerned with what his tests will do in a practical way. He is faced with certain questions about the patient, and he must find instruments which allow him to make accurate predictions. Making predictions from tests demands that the test correlate with the behavior to be predicted to an extent which makes such a prediction practical. The expert clinical psychologist will not usually make such a prediction on the basis of a single test but tries to diagnose on the basis of as much relevant information as he has available. As a consequence, he often makes a mental adjustment in his diagnoses, which accounts for the factors that our intelligence tests do not adequately measure. He may say, "This man has the ability but lacks the maturity and persistence to be a good graduate student." But the essential assumption behind his use of tests of intelligence is that they correlate to some extent with the criterion measure or behavior which he desires to predict.

Most of our usable tests give some single index of general intelligence. They follow the Binet orientation of being validated against academic grades. Typically, the best tests of intelligence correlate with school grades to the extent of about .50 or .60. In selected populations with a restricted range of talent, as in graduate school, these relationships may be much smaller. This means that in individual prediction considerable error will be made.

Nevertheless it is possible to make better guesses by using these tests than could be made without them. Moreover, this correlation may be raised by the inclusion of other kinds of information about the individual. Measures of intelligence, however limited, are of great help when we are trying to understand the reasons for a person's failure in school or when we are concerned with the problem of school placement. There is no doubt, however, that many clinicians misuse these tests. It is important to understand at least the practical limitations of a test score before that score can be properly interpreted.

We shall see a little later that even our tests of general intelligence may give us much more information than a single score. They may allow us to discover the kinds of functions in which an individual is especially advanced or deficient. They may also allow us to examine the qualitative features of a person's performance from which we can make guesses about the non-intellective factors such as persistence, self-confidence, flexibility of approach, and so on. These guesses may increase our practical ability to understand the patient's problem or predict his future behavior.

APTITUDE AND ACHIEVEMENT

There are many times when we are interested in predicting the success of an individual or group of people in learning some specific skill. In order to make this prediction, more information about the person may be needed than an intelligence score. As a matter of fact, intelligence test results might tell us very little about a man's potential skill in a particular sphere like music. Tests which are specifically designed to allow us to predict future proficiency in a particular skill are called "aptitude" tests. Their most frequent uses are in vocational guidance and in personnel selection. Tests of specific aptitudes have been designed to measure potential skill in a very large variety of fields. Mechanical aptitude, clerical aptitude, musical aptitude, and medical-school aptitude are only a small number of examples.

The student of psychological testing is often confused by the distinction between aptitude and intelligence. As he examines the various tests, he may find striking similarities between some aptitude tests and intelligence tests. He discovers that the American Council on Education Psychological Test is called a college aptitude test because the skill to be predicted is success in college. "But," he asks, "aren't intelligence tests usually validated against school grades? What, then, is the actual difference between tests of aptitude and tests of intelligence?" In a practical sense there is often great overlap between tests of intelligence and some aptitude tests. This is particularly true in the case of aptitude tests which specifically attempt to predict academic success as in the case of the ACE. In other cases the overlap is

very slight, as with tests of clerical aptitude. The distinctions between aptitude and intelligence are not clear-cut.

Some writers have abandoned the use of the term "aptitude" because of this ambiguity. The main difference between the two classes of measures may be summarized in two points. In the first place, aptitude tests tend to be narrow in scope, that is, limited to performance on a particular skill. For example, the Seashore Tests of Musical Talent (1938) attempt to measure discrimination of pitch, loudness, time, timbre, rhythm, and memory for tones, which are thought by the author to be fundamental capacities for success in a musical occupation. These talents could hardly be predicted by a test of intelligence, although they may not be entirely independent of it.

The second major difference between aptitude tests and tests of intelligence arises from their dependence upon prior training or experience. The intelligence test is usually constructed so that people will have a reasonably equal chance of performing well regardless of such factors as schooling or past experience. While intelligence tests do not altogether succeed at this effort, they are, by and large, freer from this confounding than are the aptitude tests. In aptitude measurement psychologists are always primarily concerned with producing a practical instrument which will give them the maximal predicting power regardless of the theoretical basis of that prediction.

As we have found with aptitude and intelligence, there is also great overlap between intelligence and tests of achievement. The achievement test is aimed at measuring what a person has already learned in some special area, rather than predicting future progress. When a student takes a final examination in a course in school, he is taking an achievement test. One of its purposes is to tell the instructor how much a student has absorbed of the course work so that he can give him a grade. In the same way a standardized achievement test is given to determine how much mathematics, literature, reading skill, and so on, a person may have learned. In this way it is possible to find out the strong and weak points in a person's training and possibly apply corrective measures if they are called for.

TESTS OF INTELLIGENCE

In this section we shall list samples of the various kinds of intelligence tests and briefly discuss some of them. The list will not be a complete one by any means, since it would be impossible and undesirable to give a full description in this book of all the tests of intelligence which are available. However, we have made an effort to include representative tests in each area and particularly those which are of the greatest use to the clinician. For more complete discussions the reader should consult some of the books on psychological testing listed in Chap. 3.

INTELLIGENCE TESTS AT DIFFERENT CHRONOLOGICAL AGES

Infant Tests. Psychologists have attempted to extend the techniques of intelligence testing to infants. The age range included here generally goes up to 18 months or 2 years. This is the period when speech has not developed to a sufficient degree to allow much social intercourse. The earliest important contribution to this field was made by Gesell (1928), who introduced the first set of infant tests of development as a result of the elaborate observation of large numbers of infants of all ages.

In the main, tests for this age range have not proved very successful as predictors of later intellectual development. Infants are difficult to test. Verbal instructions make little sense to the child. Their motivation is uncertain, and their attention is difficult to control. There is the question of whether there is such a thing as measurable intelligence before speech has appeared. The accuracy of such measures is also questionable because of the rapid rate of development in all spheres which makes each small age difference count for so much. Correlations between the Stanford-Binet given at 3 years or older and infant tests given between the ages of 12 to 18 months have been noted by Goodenough (1949) to range from .35 to .65. In most instances they are too low to avoid large errors in individual prediction.

The types of performance found in the tests of infant development include such functions as coordination, simple vocalization, attention to test objects, simple block building, manipulation, and so forth. Some of the better known infant tests are: Bayley's California First Year Mental Scale (1933), Cattell's Intelligence Scale for Infants and Young Children (1940) which is an extension of the Stanford-Binet to the infant level, and the Buhler Baby-Tests (1932).

Preschool Tests. The age range for these tests runs from about 18 months to about 5 years. Shyness, negativism, lack of interest, and lack of comprehension of the purpose of the tests are serious handicaps in obtaining valid measures at this time of life. The kinds of items found in these tests, depending upon the age and ability of the child, include more complex block building, language comprehension, pegboards, information, picture puzzles, vocabulary, and digit spans.

The correlations between the preschool tests and later estimates of intelligence using the Stanford-Binet increase steadily with advancing age when the preschool test was given. Honzik (1938) has presented a table which shows this relationship (see Table 4).

These data mean that, for the preschool age range, the older the child is when tested, the closer to later intelligence scores will be the estimate of intelligence derived.

The following are some of the best known tests of intelligence for preschool children: the Stanford-Binet contains items which extend as low as 2

TABLE 4. THE CONSTANCY OF MENTAL TEST PERFORMANCE IN THE GUIDANCE AND CONTROL GROUP*

Age	Group	N	Stanford-Binet 2-0	2-6	3-0	3-6	4-0	5-0	6-0	7-0
			r	r	r	r	r	r	r	r
1-9	Guidance	117	.68±.04	.59±.04	.47±.05	.50±.05	.46±.05	.32±.06	.30±.06	.42±.06
	Control	117	....	....	59±.04	.47±.05	.33±.06	.43±.06	.30±.06	.19±.07
2-0	Guidance	113	....	.71±.03	.69±.03	.60±.04	.46±.05	.32±.06	.47±.05	.46±.05
2-6	Guidance	114	....	....	.73±.03	.64±.04	.57±.05	.46±.05	.37±.06	.38±.06
3-0	Guidance	116	....	....	....	.73±.03	.64±.04	.53±.05	.54±.05	.56±.05
	Control	113	.. ...	....	......	.71±.03	.59±.04	.60±.04	.60±.04	.54±.05
3-6	Guidance	107	.. ....	....	....	. ...	.78±.03	.72± 03	.59±.04	63±.04
	Control	108	... ...	....	....	.. ....	.74±.03	.71±.03	.62±.04	.59±.04
4-0	Guidance	105	.... ..	....	. . ..	.. . ..	. ..	.69±.04	.61±.04	.66± 04
	Control	106	.... .	....	.. ....	......	. . .	.75±.03	.62± 04	.53±.05
5-0	Guidance	104	....	....	.. ....	... .	.....	.. .	.65±.04	.73±.03
	Control	106	. .....	....	....	.. . ..	....	....	.77±.03	.72±.03
S. B. 6-0	Guidance	109	....	....	....	....	..... .	....	....	.81± 02
	Control	105	....	....	....	... ..	....	.... .	....	.83±.02
S B. 7-0	Guidance	104								
	Control	104								

* From Honzik, Marjorie P. The constancy of mental test performance during the preschool period. *J. genet. Psychol.*, 1938, 52, 295. Bv permission of the publishers.

years (Terman and Merrill, 1937); the Cattell Intelligence Scale for Infants and Young Children (1940) goes up to 4½ years; the Merrill-Palmer Scale (Stutsman, 1931) and the Minnesota Pre-school Scales (Goodenough and Van Wagenen, 1940; Goodenough and Maurer, 1942) are other examples. The full list is actually a large one. Hildreth (1939, 1945) lists 33 such tests at the preschool level.

The tests which have been mentioned above are all administered individually. It is not feasible to test young children in groups until they have had at least some school or kindergarten experience. Under some conditions it is possible to use tests like the Goodenough Draw a Man Test (1926) in small groups. The Thurstones have also devised an intelligence test for children, based on their factorial techniques, which may be given in groups. This test is called the Thurstone Primary Abilities Tests for Ages Five and Six (1946). It has not achieved wide popularity.

School-age Tests. During this period of life (approximately 7 to 15 years of age), children are usually easier to test than at any other time. They have gained a strong sense of competition and are generally cooperative. They are not likely to become suspicious of the purpose of the testing and are less self-conscious about their performance. Test results are likely to be more valid during this period because of these considerations as well as because the appropriate tests have been more carefully standardized and experimented upon than those available for other age ranges. Moreover, the performance of the testees is less likely to come so close to the highest or lowest levels possible that the resulting measurement will be unreliable.

For persons of school age and older, it is possible to separate verbal and nonverbal abilities and to use group as well as individual tests. The types of tests at this period of life merge with the types found in the measurement of adult capacity. In the sections which follow we shall discuss individual, group, verbal, and performance types of tests.

INDIVIDUAL TESTS

Verbal. For many years after the publication by Goddard of the simple Binet test there have been a number of revisions of this instrument. Binet himself published one in 1908 which was later translated by Goddard. Goddard revised this latter test in 1911. The Goddard revision was widely used in the United States for about five years. Kuhlmann revised the Binet test in 1912, 1922, and 1939.

In his last revision Kuhlmann recommended the use of an altogether different index of intelligence than the IQ. For the concept of mental age Kuhlmann substituted mental units. This quantity was based upon a curve of mental growth developed by Heinis. Both Heinis and Kuhlmann believed that this curve represented the true course of mental development. The

mental units (MU) score could be converted into an index called the per cent of average (PA) which was in some ways like the IQ. However, the PA represented the MU score (that is, the average level of difficulty of the problems which the child could pass) divided by the average MU score for that individual's own age level (obtained by testing large numbers of children of the same age). Like the IQ, indexes which exceeded unity indicated a greater than average mental development. A PA below 1 meant that the child did not have the mental development which was expected (average) for his chronological age. In contrast to the PA, the IQ requires dividing the mental age score by the chronological age of the individual. The principle of an index of brightness is basic to the two techniques, and consequently, despite their differences statistically, both the PA and IQ are interpreted similarly.

Kuhlmann's test (1939) also differed from the original Binet test in that it was a point scale rather than an age scale. In the Binet test the subtests are grouped by age levels. Heterogeneous items (like reasoning, vocabulary, memory, etc.) are grouped together in the same age level because they are of similar difficulty. In the point scale a homogeneous collection of items are grouped together (reasoning alone, etc.). These items are arranged in order of increasing difficulty. The child completes one kind of item as far as he can go up the scale of difficulty, and then he goes on to another kind of item, say memory, beginning again with easy items. Each item has an age value and, in the Kuhlmann revision, a value in mental units. This enables the examiner to determine the mental level of the individual by averaging the number of mental units obtained by the child throughout the scale.

Among psychologists interested in the problems of intelligence testing, there has been a great deal of discussion about the relative merits of the age scale as compared with the point scale. The point scale has generally been preferred. The same kind of controversy has occurred over Kuhlmann's PA as opposed to the Binet use of the IQ. Whatever the merits of either technique, the Kuhlmann scale is rarely used today, and Kuhlmann's terms, MU and PA, are seldom referred to except in a historical sense.

Concerning the use of such measures as the IQ and the PA, neither of these statistics is really the most accurate way of portraying an individual's intellectual brightness. The standard score, based upon normal-curve statistics, is considered to be the most appropriate way to describe an individual's standing in any group. Most testers agree, however, that the concept of the IQ has stuck in our usage because of its wide dissemination among educators and the public. For children under the age of 15 the IQ is reasonably adequate, and any attempt to substitute ordinary standard scores would no doubt be met with considerable opposition. As unfortunate as this is, it appears that we will have to go along with the old-fashioned IQ for some time to come.

In addition to Goddard's and Kuhlmann's work, the Binet scale was revised by Yerkes and others in 1915 and 1923 as a point scale with its own innovations. In 1922 Herring introduced another point-scale revision. Terman, in 1916, at Stanford University, constructed the Stanford Revision of the Binet-Simon Intelligence Scale, which rapidly became popular, and then in 1937, with Merrill, he published a larger, more useful, and better standardized version. The original Stanford revision and the more recent 1937 replacement have never had any real competition among individual verbal intelligence tests for elementary school children. Although it is an age scale, for the clinician working with children it is *the* verbal intelligence test. Because of its importance to clinical work with children, it has sometimes been overemphasized in terms of the time spent with it in the training of the present-day clinical psychologist.

The Stanford-Binet scale consists of a large number of items which range from 2 years to the superior adult level. The younger children are given such tasks as stringing wooden beads, naming common objects, block building, etc. Throughout the test at the later levels are found such items as memory for words, numbers, and paragraphs; vocabulary; finding absurdities; identifying similarities; and other tasks involving information, perception, reasoning, memory, and verbal facility (see Fig. 1). The test has two forms, Form L and Form M, which are different in content but are relatively equivalent in other essential respects so that a child may be retested at some later date.

For a complete description and evaluation of the Stanford-Binet the reader should refer to any acceptable textbook on testing. Excellent accounts may be found in Cronbach (1949) and Freeman (1950). For the original material and a detailed description of the tests, the scoring system, and the standardization, Terman and Merrill (1937) should be consulted. While there is no need to duplicate this material here, some main points of evaluation should be made concerning the test.

There can be no doubt concerning the general popularity of the Stanford-Binet 1937 revision. This is based in part on the fact that considerable care went into its standardization and construction. The test offers great variety in the battery of subtests. A wealth of observational data of the manner in which the child attacks intellectual problems may be obtained during the testing. It is an interesting test for children. Of some special value is the fact that clinicians, educators, and the lay public at large are more familiar with this test than any other instrument, and an enormous body of experience with and information about the test has been accumulated over the many years of its popularity. Even a superior test to the 1937 revision would have a difficult time competing with it. A halo seems to surround it. It has even been used as a criterion against which to estimate the validity of new tests of intelligence. However, the limitations of the test are great, and it is probable

Comprehension items

Age 3 years 6 months

What must you do when you are thirsty?

Why do we have stores?

Age 4 years

Why do we have houses?

Age 7 years

What's the thing for you to do when you have broken something which belongs to someone else?

Psychomotor items

Age 3 years

Child must string at least four beads.

Child must copy satisfactorily a circle with pencil and paper.

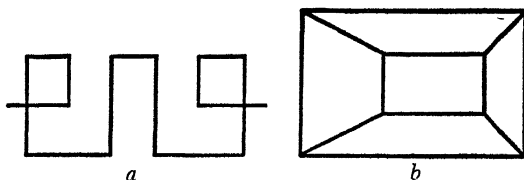
Age 5 years

Child must copy satisfactorily a square with pencil and paper.

Age 6 years

Child must copy a simple pattern in making a bead chain of at least four beads, e.g. □ ○ □ ○.

Age 9 years

Child must draw two figures from memory

Miscellaneous items

Age 4 years 6 months

Child must repeat one list of 4 digits correctly: a) 4 - 7 - 2 - 9; b) 3 - 8 - 5 - 2; c) 7 - 2 - 6 - 1.

Age 7 years

Child must correctly identify the similarity between at least two of the pairs of objects. In what way are these things alike?

a) wood and coal
b) apple and peach
c) ship and automobile
d) iron and silver

Age average adult

Subject must explain correctly what at least two of the following proverbs mean:

a) A burnt child dreads the fire.
b) He who would eat the kernel must crack the nut.
c) A drowning man will catch at a straw.

FIG. 1. Examples of items on the Stanford-Binet. (From Terman, L. M., and Merrill, Maud A. *Measuring intelligence.* New York: Houghton-Mifflin, 1937. Pp. 80, 82, 85, 88, 89, 92, 95, 97, 98, 104, 122. By permission of the authors.

that with our gradually changing concepts of intellectual capacity newer instruments of a different type will emerge.

It is of paramount importance to understand what the Stanford-Binet actually measures. We shall mention here the main questions concerning the interpretation of the test results.

1. The Binet test does not measure innate ability. No test does. It is heavily loaded with verbal items and is certainly influenced greatly by educational and cultural experiences. The standardization of the test was based upon children in the American culture, largely urban. This means that the test has limited or no usefulness with other cultural groups. Despite this, people have spent many hours in vain attempting to determine intellectual differences between various national and racial groups. Even its use with bilinguals, Negroes, and whites from impoverished social areas is dangerous.

2. When the intelligence score is interpreted, many examiners fail to recognize that it is highly influenced by nonintellective factors. Confounded together in his performance is the child's persistence, flexibility, self-confidence, inhibitions, and other personality variables. It is a great mistake to assume that we have measured pure intellectual capacity when personality characteristics partly determine performance. The skilled clinician is always on the alert for qualitative features in the examination record which give him clues about these personality variables. These clues allow him to more fully appraise the testee.

3. There are important disadvantages in a test which provides a single index of mental ability and which does not provide us with separate measures of different kinds of intellectual functioning. The Binet-type tests contain a mixture of many elements, most of which are substantially intercorrelated. It is difficult to attempt to identify, within the same subject, the adequacy of intellectual functioning in various areas like reasoning, memory, information, etc. Clinical testing is shifting gradually into the practice of attempting to separate out the various mental functions. There is an increasing tendency to ask, "In what areas is the individual deficient and in which does he excel?" Many psychologists would agree that there are different kinds of intelligence not all of which are measured by any test. This kind of approach must depend upon correlational analysis to determine the measures which are reasonably independent of each other.

4. Although the Stanford-Binet has been and is being given on occasion to adults, or late adolescents, it is completely inappropriate for people over 14 or 15 years of age. The standardization population was primarily children, and the IQ is a measure that has no meaning for an adult population.

5. The empirical validity of the Stanford-Binet is not spectacular. Bond (1940) lists some correlations found between the test and tenth-grade achievement which are fairly typical of what others have found. With reading comprehension, the correlation is .73; with English and history, .59; with

biology, .54; with geometry, .48; and with reading speed, .43. Predictions of academic achievement vary with even the most widely used and probably at present our best intelligence tests are extremely inaccurate.

6. A number of other questions have been raised which apply to measurement problems in intelligence testing in general. The Stanford-Binet is an age scale. As we have already noted, many writers have argued that this type of scale is less adequate than the point scale. Moreover, the IQ has been attacked long and frequently as being a poor measure. Its meaning at different age levels varies because not only do the types of tasks at different age levels differ but the standard error of the IQ is also variable. Competent testers, including Terman, agree that the use of standard scores is superior statistically to any other measure of intellectual performance. However, many of them argue that it would confuse large numbers of people who are not familiar with the concept of standard scores but who understand the IQ. The present authors believe that this is an unfortunate attitude, since it perpetuates a bad concept on the grounds that it is easier for people to understand than the correct one.

These and other considerations seem to be poorly understood among the great majority of Stanford-Binet users and make for serious errors in interpretation. This is probably the case because the test is widely used by unsophisticated teachers and poorly trained clinicians as well as competent individuals. In the hands of a skilled worker the Binet and the Binet-type test can be of great value. Judgments of feeble-mindedness, although not made properly with a test alone, depend upon Binet-style tests. The detection of personality deviations by means of the quality of responses, the pattern, and the approach to the test situation can result from competent Binet testing. Moreover, decisions about foster-home or school-grade placement are included in the practical applications of the modern versions of the Binet. These and other features make the Stanford-Binet invaluable at present to the clinical worker who is concerned with child problems.

Performance. It is often necessary to obtain an estimate of a person's intellectual level when the use of a test which is heavily weighted with verbal materials is impossible or inappropriate because of language handicaps. Performance tests help to remedy this difficulty by making use of items which call for manipulation rather than verbal responses. Some of these tests require verbal instructions and are sometimes distinguished from true nonlanguage tests in which the directions are given in pantomime to avoid completely the use of speech.

There has been a tendency on the part of many clinical psychologists to treat scores derived from performance tests as measures of practical or manipulative ability rather than as a measure of one kind of intelligence. This habit makes performance intelligence a kind of stepsister to the "real

intelligence" as measured by the Binet. Consequently, a child may be described as subnormal in intelligence but with excellent practical or manipulative ability. Wechsler (1950) and others have commented upon the absurdity of this practice. As a matter of fact, Alexander (1935) has suggested that "a perfect performance battery would be a better measure of *g* than a perfect verbal battery." Alexander makes this comment on the basis of data showing the theoretical *G* loadings for verbal and performance tests to be .60 and 81, respectively. Interestingly enough, correlations between verbal and performance tests are usually rather low though always positive. Correlations between verbal tests and academic grades are higher than between performance tests and academic ability. Despite the confusion over what they measure in relation to verbal tests, the child psychologist must have some mastery of the performance tests, since they are often an important source of supplementary information concerning the child's intellectual capacity.

The first performance scale was developed in 1917 by Pintner and Paterson, who standardized some of the performance tests earlier experimented with by Healy and Fernald. The latter two, many years earlier, had been interested in devising tests for studying the intellectual levels and personality traits of juvenile delinquents. In 1917 Pintner and Paterson (1917A) published their scale of 15 tests which could be presented without the use of verbal communication and which did not require the use of language on the part of the testee. The scale was designed for children between the ages of 4 and 15 years. Many of the items of this test were the forerunners of similar or identical items in later performance tests. The test items included picture puzzles, many types of form boards, picture completions, a substitution test, and an order of tapping test.

In 1930 Grace Arthur introduced a restandardization of eight tests of the Pintner-Paterson battery and added two new tests. This instrument is the most popular performance test today. The items added were the well-known Porteus Maze Test and the Kohs Block Design Test. Cornell and Coxe published another performance scale for children in 1934 which differed considerably from the first two, particularly in that it contained none of the form boards which were so prominent in the Pintner-Paterson and the Arthur tests. A few other tests of the form-board type occasionally crop up in clinical use. The Ferguson Form Boards (1920; Wood and Kumin, 1939) have been designed for very young school children and range up to the college-senior level. The Kent-Shakow Form Boards (1928) are primarily for adult use although the standardization population ranges from 6 years to adults. The Grove modification (1939) of the Kent-Shakow Form Boards made use of male adult penitentiary prisoners for its standardization.

Performance tests tend to emphasize reasoning behavior involving mostly visual perception. They deemphasize competence in the use of verbal and

numerical symbols. As we have noted above, they were originally designed as substitutes for verbal tests like the Binet when such measurement was not feasible. Their reliabilities have tended to be somewhat lower than desirable. Moreover, their correlations with verbal tests of the Binet type have generally been low (lower than .50) when age is held constant.

While the two types of tests, verbal and performance, measure some things in common, it is also apparent that they measure important functions which are different from each other. The Pintner-Paterson and the Arthur Point Scale were designed with the idea of different kinds of intelligence in mind. The authors of the Cornell-Coxe believed that a performance test should not be a substitute for, but a supplement to, the verbal-type test. This point of view has been encouraged by the factor analysts who argue that the performance tests are obviously measuring some of the primary factors which are not found in the verbal tests. They should not be considered simply as tests of manual dexterity or mechanical ability.

Although present-day interpretations of performance test scores are somewhat controversial, they are nevertheless essential in the clinical situation for children with language handicaps. They are the only standardized estimates of intelligence possible with the deaf, the non-English-speaking children, the illiterate, and children with speech disabilities. They also offer interesting opportunities to observe the operation of personality characteristics such as persistence, rashness, confidence, and other presently qualititative features of the child's approach to perceptual-motor tasks. Discrepancies between scores on the performance tests and on the verbal tests lead us to examine the reasons for these differences. In the long run it will be necessary to examine the child's functioning in real-life situations and relate it to the various kinds of intellectual capacities which we measure.

The Wechsler-Bellevue. Although the 1937 Stanford-Binet includes tests for the average and superior adult, it is really inappropriate for adult use. The standardization was based primarily upon a children's population. Besides the IQ is an inappropriate statistic for adults. Until 1939 no other individual intelligence tests of any consequence were available for adult testing. In that year the Wechsler-Bellevue appeared and rapidly gained popularity as the best measure of adult intelligence. The test was standardized for ages 10 to 60. It is still the only adequate individual test for adults which is available. In the modern clinic it ranks with the Binet as one of the most important tools of measurement.

The test is given orally and consists of 10 subtests, 5 verbal in nature and 5 performance, with a separate measure of vocabulary. Two forms of the test are available for retesting. The verbal scale consists of the following subtests: (1) information, (2) comprehension, (3) arithmetical reasoning, (4) memory span for digits, and (5) similarities. The performance items are quite similar to the tasks found in some of the earlier performance tests for

children. They are: (1) picture arrangement, (2) picture completion, (3) block design, (4) object assembly, and (5) digit symbol (see Fig. 2).

The Wechsler-Bellevue is a point scale. Its score is expressed in terms of an IQ which does not mean the same thing as the Stanford-Binet IQ. It is in reality a standard score with a concession in terminology to popular usage. In this respect (that is, in the use of a single score) the Wechsler assumes some general intellectual factor. The intertest correlations are relatively high. However, one of the reasons that the Wechsler has been so popular is that it allows for separate verbal and performance estimates. The organization of the subtests of the scale has made it possible for clinicians to undertake the analysis of the pattern of subtest scores for the same individual. This may be done because each subtest score can be expressed as a deviation from the mean score of the age group to which the subject belongs. Many clinicians have suggested that the particular pattern of scores for an individual provides information about his personality. A great deal of research has been done with pattern analysis and will be discussed in a later section.

The Wechsler-Bellevue Intelligence Scale, like the Binet, seems to be surrounded by a halo. There is no doubt that it has no present competition. It offers appropriate measurement of intelligence with adults only. Although there have been criticisms of the use of the standardization population which comes primarily from greater New York City, its sampling procedures are reasonably good. The limitations of testing people with language handicaps that applied to the Binet do not apply as much to the Wechsler, but the cultural and educational limitations do. The test score also reflects nonintellective factors but is better designed to allow us to assess their operation.

Unlike the Binet, not only can it give a single index of mental ability, but the subtest arrangement allows us, with certain reservations, to obtain a profile of abilities. The most efficient method of doing this would require subtests which are not intercorrelated and are highly reliable. Because Wechsler began with the notion of general intelligence, the subtests are highly intercorrelated and consequently subtest analysis with the Wechsler is highly inefficient. Moreover, some of the subtests themselves, particularly the performance tests, have rather low reliability for use in individual prediction. This is a point which will come up again in connection with the problem of diagnosis.

The Wechsler does not suffer from the usual limitations of the IQ as it is defined on the Stanford-Binet. It has been criticized for the use of the term IQ, but the statistic that Wechsler uses is a perfectly adequate one from a measurement point of view.

The empirical validity of the Wechsler is comparable to, if not better than, that of the Binet. We have pointed out that the typical correlations are by no means spectacular for individual prediction, but the Wechsler has yet to be

(a) VERBAL ITEMS

Information

What does rubber come from?

Comprehension

Why are people who are born deaf usually unable to talk?

Arithmetical reasoning

How many oranges can you buy for 36 cents if one orange costs four cents?

Digit span

Subject must repeat forward and backward series of digits ranging from three to nine.

Forward—6, 1, 9, 4, 7, 3

Backward—1, 5, 2, 8, 6

Similarities

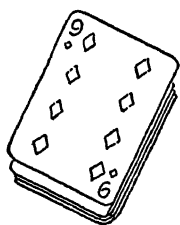
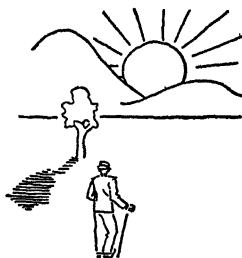
In what way are the following things alike?

Orange—banana

(b) PERFORMANCE ITEMS

Picture completion

Subject identifies what is missing.

Item 4

Item 15

Picture arrangement

Subject must rearrange the pictures to make a sensible sequence.

Item 3

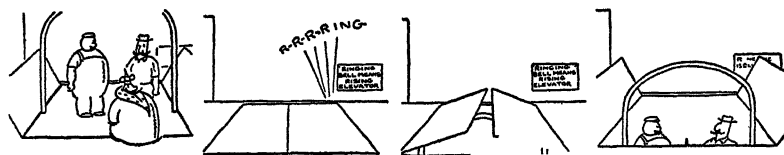
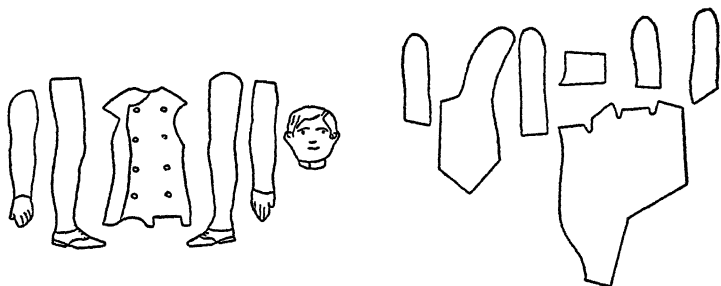



FIG. 2. Examples of items on the Wechsler-Bellevue Intelligence Test. (From Wechsler, D. *The measurement of adult intelligence.* 3d Ed. Baltimore: Williams

excelled by any other measures of intelligence. It is a valuable tool when its limitations are recognized and when the test is properly applied. It is certainly essential for the properly trained clinical psychologist to have a good command of the Wechsler-Bellevue Intelligence Scale.[1]

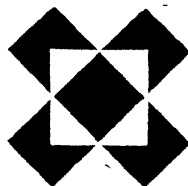
[1] During the writing of this manuscript Wechsler has published a new intelligence scale for children based upon the same principles as the Wechsler-Bellevue for adults. It is still too early to evaluate this recent effort.

Object assembly

Subject must correctly complete the jigsaw puzzle.

Block design

Subject must reproduce the pattern with blocks.

Item 4

Item 7

Digit symbol

Subject must indicate the appropriate symbols, in the blanks, that go with the digits

1	2	3	4	5	6	7	8	9
–	И	⊐	L	U	O	Λ	X	=

Sample

2	1	3	1	2	4	3	5	3	1	2	1	3	2	1	4	2	3	5	2	3	1	4	6	3

& Wilkins, 1944. Pp. 172, 174, 175, 177, 178, 179, 181, 182, 183, 185 By permission of the author.)

GROUP TESTS

We have pointed out in an earlier chapter that group tests of intelligence had their beginnings during the First World War. As a result of the immediate problems of selection, the first group tests were arranged for adults, although later other age ranges were covered by this economical technique. We shall spend very little time with group tests. They are valuable assets to the psychologist because they enable him to obtain information cheaply and

rapidly. However, given enough time, individually administered tests offer much more information to the clinician than do the group techniques. The main reason for this is the fact that in individual administration the situation of testing is so arranged that the clinical psychologist may make observations about the behavior of the individual in the testing experience. The argument for the use of group tests is entirely an economic one.

For subjects in the age range of about 7 to 15, a number of group verbal intelligence tests are available. Some cover the entire age range, and others are more limited. Some of these tests are: the Terman-McNemar Test of Mental Ability (1941); the Otis tests (1922); and Thorndike's CAVD scale (1925). Some of the group nonverbal tests include: the Dearborn Group Tests (Series 1 is nonverbal, Series 2 contains some verbal material); the Chicago Non-Verbal Examination (by A. W. Brown, 1936); the Pintner Non-Language Series: Intermediate Test (1945); the Non-Language Multi-Mental Test (Terman, McCall, and Lorge, 1942); the Progressive Matrices Test (J. C. Raven, 1938–1947); the Cattell Culture-Free Test (1944); and the Goodenough Drawing Test (1926). A number of group tests not included in these lists contain verbal and nonverbal parts: the Kuhlmann-Anderson Intelligence Tests (probably the most popular of the group tests for this age range, 1927, 1942); the Pintner, Cunningham, and Durost Test (1938); the Dearborn Group Tests (Series 2, 1922); the California Tests of Mental Maturity (Sullivan, Clark, and Tiegs, 1936, 1937); and the Chicago Tests of Primary Mental Abilities (Thurstone and Thurstone, 1943, 1946).

For use with adults a number of group verbal and performance tests may be found. The Revised Army Alpha (a verbal test by F. L. Wells, 1941) and the Revised Beta (performance—Kellogg and Morton, 1939; Lindner and Gurvitz restandardization, 1946) as well as the Pattern Perception Test (performance—Penrose and Raven, 1936)[1] are examples of these. There are other adult tests which are primarily verbal in character and which verge upon the aptitude type of test. The American Council on Education: Psychological Examination for College Freshmen (Thurstone and Thurstone, yearly, also high-school version), the Ohio State University Psychological Test (H. A. Toops, 1947), the College Entrance Board Examination: Scholastic Aptitude Test (annual versions not available), the Yale Educational Aptitude Battery (Crawford and Burnham, 1946), the Graduate Record Examination, and the Miller Analogies (W. S. Miller, 1947, not available) are examples of tests which are designed to predict success in higher education. The Army General Classification Test[2] used during the last war (latest

[1] Published by Galton Laboratory, Univ. of London, 1947, under the direction of L. S. Penrose.

[2] *Army General Classification Test.* Chicago: Science Research Associates, 1947. See Staff, Personnel Research Section, Classification and Replacement Branch, Adjutant General's Office, in War Department Technical Manual, TM 12–260 Rev. Washington, D.C.: U.S. Government Printing Office, 1946.

issue 1947) was concerned with the ability of men and women to learn military duties. While it was designed for this specific purpose, it also contained items which are typically found in standard intelligence tests.

As one can see, the number and variety of tests available which measure intellectual capacity is very large. The clinical psychologist must make correct decisions concerning the selection of the most appropriate test for his purposes. This requires not only a knowledge of testing principles but a familiarity with the tests available and with the sources of information about tests. His decision about which test or tests he should use will depend upon such varied considerations as what he wishes to measure, the subject's special limitations or particular characteristics, the reliability and validity of the test and its standardization, the amount of time available, and so on. The reader should consult textbooks which undertake to review these problems in order to gain the fullest perspective about the field of intelligence testing.

TESTS OF ACHIEVEMENT AND APTITUDE

We have pointed out in the last section the close relationship between many achievement tests and measures of intelligence. In fact, some of the intelligence tests contain items which measure some types of achievement, for example, amount of general information, solving arithmetic problems, etc. Achievement tests, like aptitude tests, are usually much more restricted in scope. They are often limited to single school subjects like arithmetic or history. They may include a battery of information tests in many school subjects. Or they may be designed to measure special verbal or motor skills.

Achievement tests may be used for a number of purposes: for grade placement; to assess the amount learned in a course of study; for personnel selection; and for diagnostic reasons, that is, to determine a pupil's strengths and weaknesses in various subjects so that corrective measures may be employed or guidance given.

To list all the achievement tests available would be of little value to the reader. Such a list would have to cover tests of reading ability, achievement in subjects ranging from elementary school to high school and college, and tests of special skills. For listings and discussions of these instruments, the reader is referred to textbooks by Cronbach (1949), Freeman (1950), Goodenough (1949), and Greene (1941). Buros (1938, 1941, 1949) offers comprehensive listings and reviews of these tests.

What we have said about achievement tests applies in a large measure to the aptitude area as well. Prediction about the future acquisition of skills is useful primarily in personnel selection and in vocational guidance. The number of aptitudes that may be measured is almost unlimited. When we classify the aptitude tests, we find that there are not only a great many types but also a large number of tests of each aptitude as well. A full listing of them would

include the following kinds of special aptitudes: mechanical, clerical, art, music, medicine, law, teaching, engineering, science, reading readiness, and aptitude for other special school subjects. Lists and discussions of these tests may be found in the same sources as for achievement tests.

Some aptitude test batteries attempt to measure basic verbal, motor, and perceptual talents as predictors of ability to learn other specialized skills. These measurements often enable the psychologist to make reasonable guesses concerning the general vocational areas in which a person could be successful. The individual with very poor spatial and perceptual abilities is likely to be a poor bet for training in mechanical engineering. On the other hand, he may have more of the talents necessary to be a successful lawyer. In the last war such test batteries were designed to select the best men for training as pilots, navigators, and bombardiers. Special psychomotor abilities were measured because of their predictive value in assessing potential ability in one of the Air Force training programs. Measures of reaction time, steadiness, complex coordination, and other abilities helped improve the efficiency of selection of these personnel. This is but one of the illustrations that may be used to point out the use of and types of tests which have been designed to measure special aptitudes.

Of course, the clinical significance of the aptitude tests rests primarily with their use in vocational guidance clinics. In the past 10 years the growth of vocational guidance activities has nearly paralleled the development of the standard psychological clinic. Guidance services have sprung up in universities as well as under the auspices of local departments of education and social service agencies. The Veterans Administration, which played so great a role in the expansion of the psychological clinic, also operates a large number of centers for vocational and educational advisement. In addition, in many cities vocational guidance services have become a fairly profitable kind of commercial enterprise.

All this activity rests upon the availability of the large number of tests of aptitude, achievement, and intelligence which are now available to vocational guidance workers. In many ways the services of these agencies have been valuable to large numbers of people when the application of vocational tests has been intelligent and when such tests have been carefully supplemented by interviews and data from other sources. On the other hand, the popularity of vocational guidance activities and the public belief in the infallibility of tests has led, in many instances, to abuses.

Many of these abuses have occurred because aptitude tests are much more accurate in the prediction of nonprofessional activities such as the skilled trades than in higher level jobs such as executive positions and professions. When the prediction must be made for lawyers, doctors, industrial vice-presidents, etc., the special aptitude tests are of minimal usefulness. Success in higher level activities depends so much on personality factors as well as upon

specific talents that the tests of special aptitudes are most often inadequate. Of course, in the extreme cases of low or high capacity, it is often possible to say with confidence that the applicant is inadequate for the job. But more often it does not take a test to record the obvious fact that the person would be totally unsuited for the position. In using tests for selection and guidance many professional psychologists (knowingly or unknowingly) have abused the public confidence and have, perhaps, done irreparable damage to the profession to which they belong by making extravagant claims which cannot be substantiated.

The usefulness of aptitude tests for personnel selection and vocational guidance depends entirely upon the correlation of these tests with whatever skill or ultimate performance we are trying to predict. This correlation represents the validity of the test or test battery. The Air Force was able to make use of tests which had low validities because of the tremendous number of men who could be chosen for any job. It is often possible to use tests with low validities when the selection ratio is large, that is, when the proportion of men available for a job compared with the number of men needed is large. Low validity means that many mistakes will be made in prediction. People who would do very well at the job will be rejected. Moreover, many wrong choices will be made. However, in the military situation the entire enterprise was so vast that a large number of individual errors could be tolerated in the interest of the total program. It was actually possible to markedly reduce the number of failures in training through appropriate selection procedures.

Clinical predictions, in contrast with mass placement programs, are always made for one person, and we cannot as readily console ourselves with statistical averages. If the validity of a test used in vocational guidance or clinical diagnosis is low, then the probabilities that we will make an error in advisement are great. Our test results must always be evaluated with this in mind. The level of validity that we need for individual prediction with any degree of confidence is much higher than when we are predicting for a group. It is essential for us to recognize that faith in the mythical qualities of objective tests cannot be substituted for a thorough knowledge of their limitations and for the use of good sense in their interpretation.

CHAPTER 5

DEFECTS OF INTELLIGENCE

The measurement of a person's intellectual capacity can be of great value to the clinical psychologist. It is often an essential part of the evaluation of a patient's personality. Information about the intellectual resources which an individual can bring to bear on his problems may make a considerable difference in the type of therapy undertaken with him. But in addition to this, the emotional problems of the person and the mechanisms by which he deals with them are often reflected in measurable ways in his intellectual performance. The individual's effectiveness and unique style in problem solving reflect the organization of his personality. Therefore, clinical psychologists have become interested in studying the intellectual processes as a means of obtaining information about the manner in which a person's emotional adjustment affects his performance. While perception, learning, reasoning, judgment, and all the other intellectual activities are interesting to the psychologist in themselves, to the clinician and personologist they offer excellent mediums for studying the individual's total personality in action. This is particularly true when it can be shown that the individual's intellectual functioning is defective. In such a case, not only can we use this information in making therapeutic decisions, but the nature of the intellectual defect may tell us something about the kind of emotional adjustment that the person is making.

In our historical survey of the field of clinical psychology, we noted that Esquirol was the first man to clearly differentiate simple lack of capacity from its loss as a consequence of disease. In the years which have followed, this distinction has remained with us. Various interpretations of the observations concerning defects of the intellect have been offered. To identify the impairment of mental-functioning which resulted from physical or mental illness, terms like "dementia," "deterioration," and "regression" have been used. Because these terms are likely to convey implications concerning the theoretical explanation for the intellectual loss (which is poorly understood at the present time), Hunt and Cofer (1944) have preferred to use the term "psychological deficit." We like the expression *intellectual deficit* a little better, since it is possible to confuse psychological deficit with the affective disturbances which occur in mental diseases. However, both terms will do.

Throughout this chapter we shall use the expressions "intellectual deficit," "deficit," "impairment," and "loss" to refer to the harmful effects which psychological or physiological illness may have upon the intellectual processes.

Poor intellectual functioning may be spoken of as *mental deficiency* when the implication is drawn that the condition represents a lack of intellectual development rather than a loss due to disease. While the distinction is accepted in psychology and is certainly justifiable, it is really not clear-cut. It is not always a simple matter to determine whether an intellectually inadequate person represents a case of simple mental deficiency (that is, lack of development) or intellectual deficit (loss of powers which were once there). Moreover, some cases of mental deficiency may be etiologically closer to cases of intellectual deficit than to other cases of mental deficiency whose condition resulted from quite different causes. For example, it is believed that some mental deficiencies are caused by very early injuries to the central nervous system arising out of bacterial invasion. This deficiency appears to be essentially the same as the cases of deficit which develop much later (after the intellectual development has progressed to full maturity) as a consequence of the same bacterial invasion and similar damage to the central nervous system. Surely mental deficiency which results from infection during infancy is vastly different from the deficiency which appears to be hereditary in nature. Yet, for want of more information, the main distinction which is made between mental deficiency and intellectual deficit is that in the former case the intellectual development was retarded, while in the latter situation the intellectual functioning had once been "normal" and later, as a consequence of disease, was impaired or lost. In any case both conditions are types of pathological states with respect to intellectual functioning.

The emphasis in this chapter has been placed on the problem of intellectual deficit because we believe it is of greater potential importance to the clinician. It provides him with opportunities to understand the organization of intellectual and personality processes as well as with information to make better diagnostic formulations about a particular patient's mental illness. Most of this chapter will be concerned with the theoretical and practical problems of understanding and measuring intellectual deficit. However, since it is an important related problem which is difficult to untangle from the question of deficit, we shall first have some things to say about mental deficiency.

MENTAL DEFICIENCY

The earliest psychological clinics owed their existence, in part, to the great interest in mental deficiency in the early 1900's. The later clinics, particularly as they developed around 1930, were much less dominated by the consideration of the problem child. Relative to the tremendous expansion of

clinical interest and facilities, there appeared to be a lessening of interest in the problems of mental deficiency. The development of the Veterans Administration mental hygiene organization following the last war increased the percentage of psychological clinics devoted mainly to adult problems. There appears to be, however, some recent upsurge in activity with children and some renewed interest in mental deficiency. There is no doubt that some of the most fascinating theoretical and practical problems may be found in this area. Space should be devoted, therefore, to some of these problems. We cannot attempt to present a complete account of considerations which arise out of the study of mental deficiency. Sarason (1949) has performed that valuable service in a recent book.

A great many forms of behavior have been classed under the term mental deficiency. But the practical question of who is mentally deficient and who is not continues to confront us. The effectiveness of our research in this area depends upon the resolution of the problem of identifying properly and consistently what it means to be mentally deficient. This will also determine the treatment of patients who are mentally deficient. Classification, etiology, and measurement are all interrelated and basic problems. We shall discuss the main considerations in the study of these problems in the sections which follow.

Measurement. What we really are concerned with in the case of measurement is, "Who is mentally deficient?" Most people would answer this question by referring to our intelligence tests. Many clinicians have continued to use the IQ or some comparable measure as the major and often only indication of the diagnosis of mental deficiency. But we have learned in Chap. 4 that intelligence is something that we may define in many ways. An individual may show up as deficient in some of our tests and not in others. How then can we say he is mentally deficient as a consequence of low IQ?

But the problem is still more complicated. There are many ways of getting the same IQ. The kinds of intellectual strengths and weaknesses which make up the total score may vary greatly between individuals with the same IQ. The total measure therefore does not tell us very well what the individual can and cannot do.

Furthermore, some people think of intelligence in terms of social adaptiveness. There is nothing wrong with this, nor is it necessarily better than relating it to our tests. People with high academic degrees may behave very foolishly in social situations. Two people with the same IQ, both mentally deficient in these terms, may differ greatly in social adaptiveness. These differences, in fact, may be so great that one such person may have to be institutionalized while the other is gainfully employed and makes a reasonably acceptable citizen. The question of which people are mentally deficient is, therefore, not a simple one and cannot be decided by the IQ alone.

Many suggestions have been made concerning what kinds of criteria should

be used in identifying a mentally deficient individual. The British have tended to lean toward the use of some estimate of social adequacy, while Americans have tended to go overboard for the IQ. Representing the former view is Tredgold (1947) [as described in Sarason (1949)], who goes so far in this direction that he would classify some persons having an average IQ as mentally deficient because they have failed to care for themselves adequately in the community. The best example of the advocate of more inclusive criteria of mental deficiency in this country is Doll (1941). Doll has repeatedly emphasized the inadequacy of the IQ as a satisfactory criterion. His own criteria include subnormal test intelligence, social incompetence, arrested development rather than retrogression (deficit), presence of the defect at maturity, constitutional origin, and incurability. One may question the inclusion of many of Doll's criteria which he maintains must be present for a conclusive diagnosis of mental deficiency. Some of them are not too practical for the clinic, since it takes a long time to assess the curability of mental deficiency. Moreover, the constitutional decision can rarely be positive. To implement the evaluation of social competence, Doll (1935) introduced a test of social maturity which has gained wide acceptance in recent years. This test will be described in a later chapter on personality measurement. By interviewing someone in close touch with the child in question, the scale may be used to obtain evidence of linguistic, social, and motor development and relate this to norms for each particular age level from infancy to adulthood.

The chief problem in the application of the social-competency criterion in the diagnosis of mental deficiency is the vagueness and subjectivity involved in this kind of evaluation. How do we judge the social inadequacy? In what kinds of social functions should we look for competence and incompetence? Doll has undoubtedly helped matters in a practical sense with the social-maturity scale. But more must be learned about which intellectual functions are associated with different kinds of adjustments so that they may be used diagnostically and prognostically.

Interest among psychologists in measurement other than the global IQ is a step in the right direction. Jastak (1949) recently criticized the use of the social and statistical criteria of mental deficiency and has offered an additional criterion. He points out that we never really measure capacity, although this is what we may be trying to estimate. Actually we are measuring the level of performance that a person has achieved, and this may be far below his maximum altitude. Jastak suggests that the best estimate of maximum level or capacity is the function which yields the highest score. He is suggesting a special use of scatter analysis which is a diagnostic technique we shall discuss later in connection with intellectual deficit. An individual with an IQ which is statistically at the feeble-minded level, but who achieves some subtest scores at or near normal, is not feeble-minded accord-

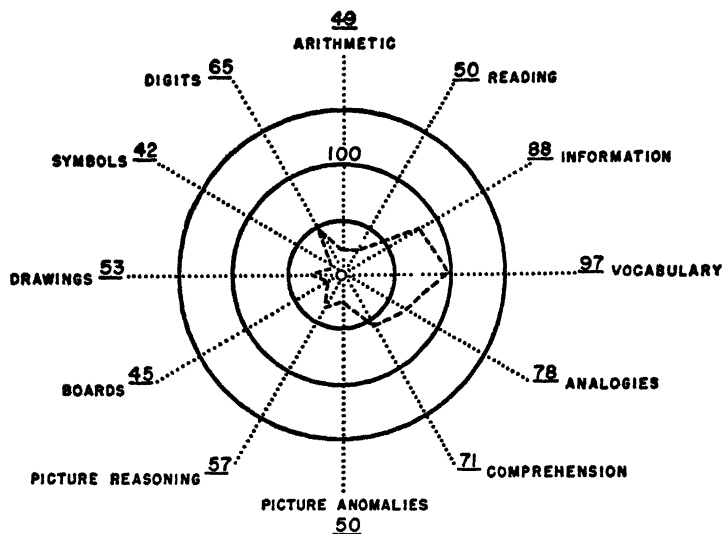



FIG. 3*a*. Test results of clinic case A on psychometric patterns. Psychiatric diagnosis: schizoid personality in person of average intelligence (IQ 62).

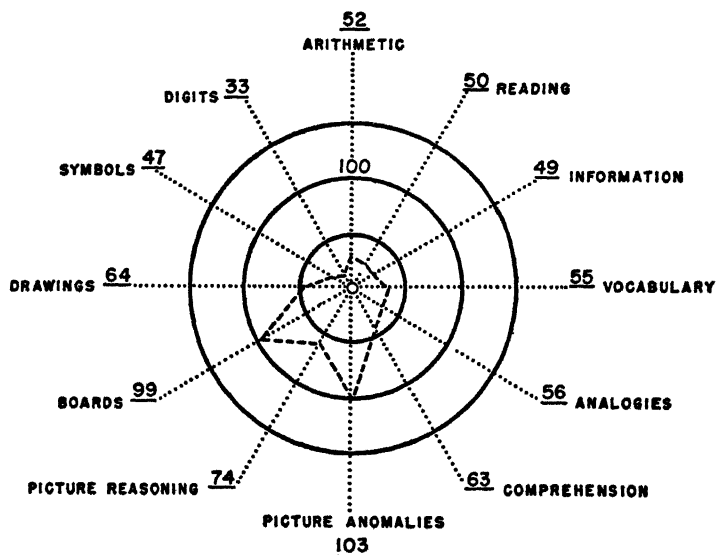



FIG. 3*b*. Test results of clinic case B on psychometric patterns. Psychiatric diagnosis: psychopathic personality in a person of average intelligence (IQ 62).

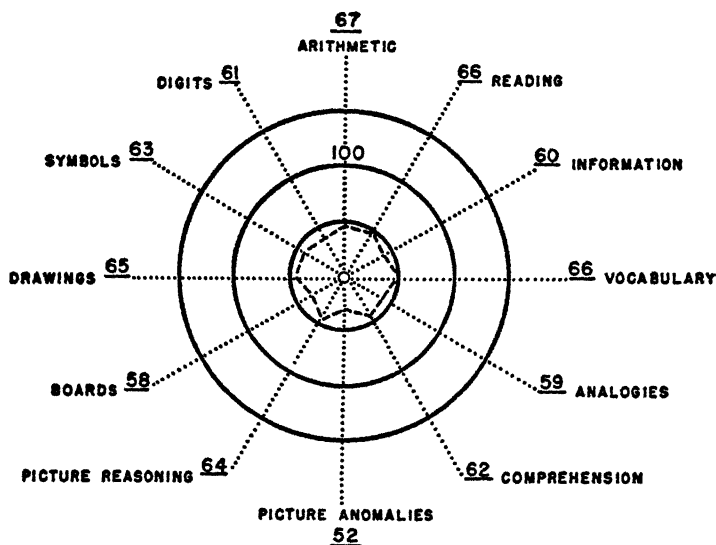



FIG. 3*c*. Test results of clinic case C on psychometric patterns. Psychiatric diagnosis: inherent mental deficiency, moron level, in a person of adaptable personality (IQ 62). (From Jastak, J. A rigorous criterion of feeblemindedness. *J. abnorm. soc. Psychol.*, 1939, **44**, 367–378. Pp. 375, 376, 377. By permission of the publishers.)

ing to Jastak. We must seek other explanations of his poor performance, perhaps in emotional or motivational factors. He presents a number of test profiles of patients with identical IQ's but markedly different patterns and maximal levels. They are reproduced here in Fig. 3.

Jastak maintains that cases that are socially or economically successful are really not feeble-minded (this is part of his definition of mental deficiency) and that the use of his criterion would eliminate the inconsistency of finding patients who were diagnosed feeble-minded who later became economically and socially self-sustaining. His arguments are cogent, but the data are at present unavailable which would indicate whether or not such a technique would in reality be superior to what is suggested by Doll and would, indeed, enable the training schools to concentrate on the appropriate patients.

Classification. Classification is the first and most primitive step in the scientific process. It involves grouping our observations in terms of their common elements. Our earliest divisions into classes usually must be revised over and over again because, as we learn more about the phenomena under observation, we discover that we must change the basis of classification in order to bring it in line with new information.

If we examine all the known varieties of mental deficiency, we notice that we can identify a group in which defective intelligence seems to be mild, to

run in the family, and which appears to have no complications like brain injury, disease, or other characteristics which might be presumed to be the causal conditions of the defect. Studies of these cases have suggested that a hereditary factor could be responsible for the mental inadequacy. This group of cases has been identified in a number of ways by workers in this area. Sarason (1949) has called them the "garden-variety" of mental defective. Others such as Lewis (1933) have called this group the "endogenous" mental deficiencies. Strauss (1939) has used the term "subcultural." There has been no agreement concerning the real etiological features of this class, and many theorists are still arguing the nature-nurture question. In these cases the role of physiological, genetic, and motivational factors is difficult to parcel out.

Poor intellectual performance has also been found in a large number of other types of settings. This symptom may be found among the psychoses, in cases with the presence of organic disease, metabolic disorders, congenital injuries, and special hereditary defects. Most modern-day thinking makes use of a dichotomous classification, with the garden-variety mental defective (considered by some as the only true feeble-minded group) on the one hand and all the other types of mental deficiencies lumped into another group and further subdivided in terms of what is thought to be their specific etiology.

Most of the classification systems are the most convenient descriptive ways of grouping cases and reflect present-day ignorance concerning the nature of the mental processes. For example, when Tredgold (1947) divided mental deficiency into four classes, amentia due to inheritance, amentia due to environment, amentia due to both inheritance and environment, and amentia without discoverable cause, he was groping in the dark. Such a division is arbitrary and does not fit into any real knowledge concerning the nature of mental defects. Nor is it possible at the present time to make any well-grounded diagnosis for these classes.

It is quite probable that the mental deficiencies hang together only in the most superficial sense and that the basis of the garden-variety type is entirely different from cases, described by Jastak and others, who perform some tasks at an average level or higher. Moreover, these two forms of mental deficiency may have little direct relation to cases with such physiological conditions as metabolic disorders. If this is true, then any classification based upon similarities in symptomatology must eventually be revised when we know more about the nature of intellectual behavior.

From the clinician's point of view, the classification would be of value at the moment if it allowed him to make the proper decisions concerning what should be done with each group. Little is known along these lines. What should be done with the garden-variety type of defective is not agreed upon. Doll (1947) maintains that the group he calls feeble-minded cannot be treated effectively, since there is no chance of the development of social

competency. Some kinds of defectives he believes can be helped. Jastak (1949), who would identify the former feeble-minded group as those with low intellectual performance on all tests and subtests (low scatter), appears to agree that the truly feeble-minded are never successfully able to manage their affairs adequately in spite of any training methods. If this were true and this group could be reliably identified, the course of action that should be taken would certainly be different from that used with those mentally deficient individuals whose defect is largely a function of motivational or emotional variables. At the present, resolution of this difficulty remains one of the crucial problems in the field of mental deficiency. Research which will clarify the potentialities of the various classes of mentally deficient people is lacking, has been inadequate, or has produced controversial results.

Etiology. While all the problems we have discussed are interwoven with the question of etiology, a few words might be said about this problem specifically. While many cases of mental deficiency have been associated with some metabolic condition, infection, or neurological damage, and seem to be the result of these conditions, the exact nature of the effects of these causal agents is not known in any instance. We can mention only some of these conditions here.

Mental deficiency has been found, on rare occasions, to be associated with the incomplete oxidation of an amino acid, phenylalanine. In these cases phenylpyruvic acid is found excreted in the urine. The condition appears to be genetically determined. The work of Penrose (1935), Jervis (1939), and others has thrown some light on this condition. A number of organic conditions seem to be associated with the symptoms of mental deficiency. For example, epilepsy has been found associated with both slight and severe mental impairment. Infections of the nervous system such as meningitis, encephalitis, and congenital syphilis appear under some circumstances to produce losses in mental functioning. Cranial deformities and pressure by the cerebrospinal fluid are another source. German measles in pregnancy (especially early in pregnancy) has been associated with mongolism, and irradiation with X rays during pregnancy has also been thought of as an etiological factor in some mental deficiencies. Metabolic disorders such as cretinism are also known to produce permanent damage if not checked early. But exactly how these conditions work to produce the mental defects is not clear, although the assumption has been that irreversible change or destruction of nervous tissue is the common cause. As we have noted, some mental deficiencies have been thought to be primarily inherited. For more detailed accounts and a bibliography of these etiological factors the reader is referred to Sarason (1949). The state of medical knowledge in this area is quite limited.

The causes and effects of some of these mental-deficiency syndromes are better understood than others, although in any case their precise influence

on the intellectual processes is nowhere near known. For example, it is known that mental deficiency may be associated with meningitis, probably through the destruction of brain tissues. However, the majority of people who have had meningitis show no intellectual impairment that can be measured, even though they may show physical disabilities. It is reasonable to attribute this to differences in the tissues which are damaged by the disease, but we do not know which tissues are important and how this deficiency is related to many of the other conditions. The same thing may be said about hydrocephaly and syphilis, both of which produce destruction of brain tissue. Moreover, although cretinism is a metabolic disorder resulting in intellectual deficiency, the exact nature of the effect of this disease on the nervous system remains to be discovered.

There is no doubt that severe mental illness may produce what appears to be deficiency of intellectual performance. It is not clear how mental illness operates to produce this effect. In some ways the question grows out of the arbitrary division of psychological processes into cognitive, motivational, and affective. There can be little doubt that what we measure in performance is not solely an intellectual thing but reflects motivational and emotional influence. In fact, if we thought of performance as an expression of the total personality of the individual, we might consider at least some cases of defective intelligence as a reflection of a defective personality. Even if capacity were a fixed physiological variable, performance is all we ever observe, and it is certainly a function of personality variables.

In any event, we are left with huge problems in the area of mental deficiency. The basic ones are: (1) What conditions produce the different types of mental-deficiency syndromes? (2) What are the mechanisms of their effect upon the intellectual processes? (3) What are the potential outcomes of each of the syndromes, and what treatment or disposition is indicated for them? (4) What kinds of measuring devices and indices can be used to differentiate the different types? And finally, (5) What is the real nature of the processes we call intellectual, and how do these processes relate to the practical problems of adjustment to the environment?

INTELLECTUAL DEFICIT

There are a large number of observational and experimental studies in this field. If the reader wishes a fuller presentation of the research up to 1944, the Hunt and Cofer article previously cited will furnish an excellent beginning. We shall attempt to discuss only the highlights in the theoretical and practical side of the study of psychological deficit.

The large variety of researches into deficit have arisen from a great number of different frames of reference and have been undertaken for various purposes. In many instances, comparison of the results cannot be made prop-

erly because different functions have been measured or different tests used. The methods used have differed so greatly that comparison of the studies becomes, in many instances, impossible.

The general study of intellectual impairment is of great importance for three main reasons. The research findings should be of help in our understanding of the various clinical disorders. They should also throw some light on the nature of intellectual functioning. Moreover, in the practical clinical situation, the data could be applied to the study of the psychological status of the individual patient. In the latter instance, the measurement of the pattern of intellectual functioning in a particular patient becomes part of the diagnostic picture. In the sections that follow we shall first discuss the theoretical interpretations of the findings on deficit, indicate the kinds of functions measured, and describe the techniques of measurement.

Theoretical Explanations of Deficit. A number of theoretical explanations of a fairly unsystematic sort have been offered by different psychologists to account for deficit behavior. Because so little is really known about this question, it will not pay us to do more than merely mention the main points of view that may be expressed by people who attempt to interpret the observations. We must also point out that the kinds of functions measured in experiments on deficit represent such a hodgepodge that it may be reasonable to speak of many kinds of deficits. One theoretical approach may make better sense when considered in connection with one kind of disorder than with another.

Generally speaking, workers in this field have preferred to think of intellectual deficit in one of two ways. Some have attempted to approach the problem on a psychological level, and others have looked for explanations from a physiological point of view. Little real success has been obtained with either approach up to the present.

Psychological Views. In the psychological approach, many of the so-called explanations are little more than descriptive statements. The most cogent psychological way of thinking of intellectual deficit in the functional psychoses and psychoneuroses appears to us to be a motivational viewpoint. Observation of schizophrenic patients, for example, strongly suggests that failure or impairment in cognitive functions does not really represent loss of capacity in those areas but lack of motivation to sustain attention to the task or conflicting motives associated with psychological threat. This point of view is all the more impressive with the observation that, with more adequate rapport and some coaxing, the previously failing schizophrenic patient may improve his performance greatly. The motivational view includes the possibility that the functional disorder is a mechanism of adjustment of some kind which is adopted when other mechanisms fail. The patient's defense against threat is to restrict his sphere of responsiveness so that it appears to the observer that he has lost his capacity for certain functions that were pre-

viously intact. One instance of this kind of defense is the condition known to child psychologists as "pseudo-feeble-mindedness." In this case a child with normal intellectual capacity performs at the level of the feeble-minded child because of emotional withdrawal from competition and social threat. With therapeutic attention he may improve radically.

Physiological Views. Proponents of the physiological approach to deficit have, in the past, spoken of cerebral pathology or endocrine disorders as the important features to look for. The mental disorders have been thought by some to be related to heredity, body type, and more recently, to metabolic functions. Some recent arguments in support of the metabolic view may be found in the work of Hoagland (1947). Others have been struck by the similarity of the deficit between patients with organic brain pathology and the schizophrenias, believing that this indicates a common organic pathology. Few of these leads have borne real fruit at the present time. Whether it will be more profitable in the long run to investigate deficit through the behavioral frame of reference or the physiological one is not clear at our present stage of progress. Neither approach has effectively dealt with the problem of the nature of intellectual deficit. At best, we have a large quantity of unsystematic observations and theory which suffer mostly from a lack of completely satisfactory methodology.

Types of Functions Measured. A wide variety of cognitive functions has been studied by researches into intellectual deficit. Nearly all conceivable kinds of measures have been made with most of the standard types of tools for the study of intellectual capacity. The most common of these types of measures include mental age and IQ scores, tests of vocabulary, reasoning, immediate memory, judgment, and a large group of other similar and related processes. In addition to these more typical measures, psychologists have studied receptive processes which include sensory thresholds and perceptual behavior. The sensory studies, most of which have tended to be weak on technique, have not yielded much by way of dependable differences between various types of patients and nonpatients. The perceptual studies, on the other hand, have discovered impairment of functioning in copying geometric designs on the part of schizophrenics, changes in the figure-ground fluctuations of manic-depressives, and a number of other deficits for these and other patient groups. In the past few years, interest in the apparent relationships between motivations and perceptual behavior has led to a renewed attack on the perceptual process in various psychological disturbances. For a long time there has been great interest in the perceptual processes in patients who have some kind of organic brain damage.

A wide variety of response processes has also been investigated with the expectation of coming up with significant relationships between different disorders and the cognitive functions measured. Researchers have studied functions such as response times of various types (simple, complex, verbal, motor),

word association, memory, language and thought, conditioning, and emotional behavior. Many of these investigations have borne interesting fruit. Little agreement will be found, however, concerning the way in which many of the observations should be interpreted. The field is now handicapped because of methodological difficulties and the lack of any systematic theory concerning the real nature of the psychological changes which seem to occur in some mental disorders.

Techniques of Measurement. The concept of intellectual deficit assumes a temporary or permanent loss or impairment of some functions which had previously been present or at a higher level. The technically ideal method of demonstrating the presence of deficit would therefore require some measure of these functions before the disorder intervened and produced the impairment. This could then be compared with measurements during or following the disorder. Because of the lack of these premorbid scores in patients with mental disorders, all the techniques for the measurement of deficit have depended upon various ways of estimating what the intellectual status of the patient was before the onset of the present condition. The existence of increasingly complete records on large numbers of men in the military service and in the public-school systems may make it possible in the future to use this more desirable approach of having premorbid measures. Rapaport and Webb (1950) have recently demonstrated deficit by the use of premorbid intelligence tests (measured in high school). However, lack of control cases reduces the usefulness of these data.

Even this technique often offers hazards. We can never be sure that, when we first tested these people, they were not then suffering from some degree of deficit. The best illustration of this problem may be found in some of the recent studies of the effect of electric shock or brain surgery on the intellectual functions. Preoperative measures were available in this instance, but the assumption that these measures were obtained on psychologically intact organisms could not safely be made. In most instances, the patients operated upon or shocked were badly deteriorated during the time of the first testing or were in such severe pain (as in the case of incurable cancers) that no satisfactory estimates of original intellectual level were possible. Moreover, the question of how sensitive our tests are to slight and even moderate impairment always plagues us.

In place of the use of premorbid measures, there have been devised two major ways of studying intellectual deficit. The first approach is entirely normative in nature, that is, it makes use of central tendencies in the functions to be measured among various diagnostic groups. We have called this the "group-comparison technique." The second general technique emphasizes an intraindividual analysis. We have called this the "subtest-pattern technique." The latter approach studies the pattern of performance on different functions within a patient and refers this pattern to norms which have been established

for various types of disturbances. Let us examine how these procedures work and the problems that arise in their use.

Group-comparison Technique. Properly used, this procedure requires the selection of a group of patients which is homogeneous with respect to kind of disorder and compares it with another group, usually normals, which is similar in certain important variables. The matching on the relevant variables may be done on a group basis. For example, the selection of the two groups is made so that such variables as age, education, cultural background, and any other factors which must be controlled are equivalent for both groups. On the other hand, the matching may be done by individuals, that is, for every patient a control is selected who is comparable in all the important respects. The patient group may be compared with the controls in such measures as mental age, IQ, or in any of the intellectual, sensory, perceptual, or response functions. Differences in average performance in favor of the control population are interpreted as suggesting the presence of deficit in the other group. The control group is therefore used as a standard to estimate the premorbid level of the patient group.

In both the group and individual matching procedures, the comparison depends upon the equivalence of both groups with respect to the appropriate variables. The danger in the use of these procedures lies mainly in compromising with these controls out of necessity and ignoring variables because they are thought to be unimportant. A perfect match is virtually impossible even with the greatest care. Consequently, we frequently have to assume that differences between controls and experimental subjects are insignificant, irrelevant, or are randomized by the use of as large a sample as possible. These are often dangerous assumptions.

A large number of studies of this type have been attempted. It is not possible to review them here. Many of them have been discussed by Hunt and Cofer (1944). Other reviews may be found in Hunt (1936), Rouvroy (1936), Wechsler (1944), Kendig and Richmond (1940), Roe and Shakow (1942), and Brody (1942). Examination of them shows that the studies varied greatly with respect to the types of measures employed and the adequacy of the controls used. The great disagreement that is found among the various studies can probably be laid to this lack of controls, differences in the functions measured, sampling, and differences in the testing techniques used.

From this work certain conclusions appear to be reasonable at least on a tentative basis. There tends to be agreement that some degree of deficit, using standard intelligence tests, is found in nearly all the disorders with the possible exception of the psychoneurotics and patients following brain surgery or convulsive therapy. The deficit is most marked in the organic psychoses. Certain types of tests do not appear to suffer as much loss as others. For example, information and vocabulary hold up well under the disease process, while tests requiring conceptual thinking, speed, and sustained associative

thinking show losses. The more complex or difficult the function measured, the greater the degree of deficit appears to be.

The general failure to employ adequate sampling, to properly match groups, to measure comparable functions, and to use comparable techniques has left the normative study of psychological deficit in a fairly inadequate state. There is still a need for this type of study.

Probably more crucial than any other single question is the problem of the adequacy of our current tests. Most of them were not designed for the purpose of measuring deficit. Many are not too reliable. Moreover, there is the great problem of identifying the functions that we are really measuring. As long as we do not know the interrelationships between our tests, the nature of cognitive processes, and the role of emotional and motivational factors in performance, we can do little more than to haphazardly describe the strengths and weaknesses of various diagnositic groups. Even at that, we fall into the difficulty of using a diagnostic scheme that is little more than a rough classification by symptoms and which is coming in for more and more criticism among clinical psychologists and psychiatrists at the present time. Our present labeling devices for disease syndromes and tests seem to have led us into a blind alley.

Subtest-pattern Technique. This technique of studying deficit uses the pattern of scores within the record of a single patient to estimate his premorbid level. It depends upon the now common observations that some functions like vocabulary hold up (or do not show much loss) in mental disturbances while others show considerable impairment. By comparing the degree of deviation of test scores which usually show loss in mental illness from those which generally hold up, a diagnostic statement may be made about the patient. The actual pattern of subtest scores may be analyzed, or a simple measure of the degree of scatter may be obtained to show the spread of subtest scores. Remember that while this is an intraindividual measure, that is, it deals with the variation of different performances of the same person, the interpretation of such patterns depends on its comparison with the pattern of some normative group. We can say nothing about a particular patient's pattern unless we know what is found in other patients or groups of people with or without the symptoms of illness.

Subtest-pattern analysis appears to have obtained its impetus from some work by Wells (1927), although the technique has even earlier roots in connection with the problem of delinquency. In 1930, Babcock developed a workable method of measuring psychological deficit, employing vocabulary as an estimate of original intellectual capacity. Babcock used as her measures of loss, tests of new learning, motor efficiency, immediate memory, and a number of other functions which were readily impaired in the mental disorders. In standardizing her technique, she administered these tests along with the Terman Vocabulary list to a group of "normal" adults. She then adjusted

the scores on vocabulary so that the normal-group average was the same as on the rest of the battery of tests. In other words, the average difference for the group between scores on the vocabulary test and each other test was set at zero. Testing a sample of paretics, she found differences in efficiency scores which supported the notion that patients with organic brain damage would show a characteristic loss of efficiency in certain functions, namely, motor skills and new learning (Babcock, 1930). Later a similar finding was demonstrated with schizophrenic patients (Babcock, 1933). These tests have since been revised for clinical use (Babcock, 1941; Babcock and Levy, 1942).

With this beginning, the diagnostic use of differential patterns and the construction of new instruments for this special kind of measurement became a major activity of clinical psychologists. The original Babcock technique, which employed vocabulary as the best estimate of original capacity, was extended to the use of other measures like information, which were thought to "hold up" in the mental diseases. Despite the difficulties with the use of this technique with our present instruments, the Babcock approach has been exceedingly popular and useful to the clinician. The literature on the subject has become voluminous and rather controversial.

A simpler form of subtest-pattern analysis consists of a measure of the degree of scatter of the subtests in an individual test record. In the analysis of subtest patterns, we are interested in the kinds of tests selectively failed by the patient. In the *scatter analysis* the main interest is in some measure of the degree of spread of the subtest scores without reference to which items show extremely high-level performance and which result in exceptionally poor attainment.

There are many different kinds of scatter analyses depending for the most part upon the test which is used. We shall have occasion to briefly describe some of these techniques as they apply to some of the tests such as the Stanford-Binet and the Wechsler-Bellevue. All the techniques involve some variation of the basic theme of the degree of deviation in subtest scores from some established level or reference point. The use of scatter measures assumes that large amounts of scatter are indicative of emotional disturbances. The more the scatter, the greater the disturbance is presumed to exist. The individual is performing erratically, at a high level in some functions, with impairment in others. The procedure has been used by many clinicians to make decisions concerning whether a child is feeble-minded or suffering from an emotional disorder.

Some workers like Jastak (1934, 1937), Kinder (1935), Kinder and Hamlin (1937), Bijou (1942), and others have argued that large scatter (in which a child with a subnormal intelligence performs well above the feeble-minded level on one or more subtests and below in others) may contraindicate a simple feeble-minded diagnosis. Some investigations have upheld the assumption on which scatter analysis rests, showing larger scatter in the performances of

psychotic patients than in normal or simply feeble-minded children (see Hunt and Cofer). Others like Harris and Shakow (1938) and Kendig and Richmond (1940) have obtained negative results when better controls were introduced. At the present time the use of scatter analysis as a sole criterion of anything appears to be of very doubtful validity. Many clinicians believe that scatter analysis is diagnostically useful, and it continues as a frequently practiced technique. Undoubtedly the construction of the Wechsler-Bellevue Scale is superior to the Stanford-Binet for this purpose, although its use is limited to adults. However, it is difficult to see how simple scatter analysis with present-day instruments and in the absence of validated pattern analysis can ever be more than a rough screening technique to encourage the clinician to look a little further.

Qualitative Observations. In addition to the study of quantitative patterns and scatter analysis, the performance of the individual may be examined from another point of view. Aspects of the performance such as response times, rate of response, amount of productivity, form of the response, projective content, and the attitudes and emotions that the individual displays to the testing itself or to certain parts of the testing may produce information which is of great importance in diagnostic evaluation. Since this approach provides a broader opportunity to study the personality of the individual, we shall discuss it in our later chapter on projective techniques. However, it should be pointed out here that any individual situation provides some opportunity for the subject to perform in qualitative ways which distinguish him as a unique individual. These features often provide the clinical psychologist with important cues concerning the personality dynamics.

Tests of Deficit. In this section we shall discuss the main diagnostic psychological tests on which the group-comparison and the subtest-pattern techniques of deficit measurement have been applied. In addition, we shall describe a group of instruments which were specifically designed for the measurement of certain kinds of psychological deficit. In the former category, we have included the Stanford-Binet and the Wechsler-Bellevue. The latter class comprises the Babcock, the Shipley-Hartford, the Hunt-Minnesota, and the special concept tests.

Stanford-Binet. The pattern-analysis technique has, on occasion, been used with the Stanford-Binet Intelligence Test. Various attempts have been made at grouping the subtests into clinically determined clusters which appear to measure the same functions. For example, visual perception, memory span, word knowledge, reasoning, and other groupings have been established on the basis of appearance and clinical intuition. In this way the intellectual strengths and weaknesses of any child may be studied. This pattern may then be compared with normative data for various clinical groups. Unfortunately, the normative data available are not entirely satisfactory for this purpose, and any attempt at this time to follow such a procedure is hazardous. Moreover,

the technique of grouping by clinical intuition when factorial techniques are available has been under considerable fire in recent years.

Despite considerable uncertainty about its validity, the special technique of scatter analysis with the Binet has continued to be used. Harris and Shakow (1937) have classified measures of scatter on the Binet into three types: (1) Counting the number of years or age levels over which successes and failures are found. An example might help: One child with a mental age of 9 years may miss subtests as far down as the 5-year level and pass an item at year 12. Another child with the same mental age may have a range which runs from 7 years to 10. The former child has a degree of scatter which is well beyond the typical finding for most normal children and, therefore, to the clinician using this technique is suspect with regard to emotional disturbance and deficit. (2) Counting the number of months' credit which are earned above and below the basal year (the first year in which there are no subtest failures). (3) Applying some formula which takes both range and credits into account and weighting them in terms of their distance from the mental age level. The first method is the simplest to apply and understand.

Wechsler-Bellevue. In using the technique of pattern analysis the Bellevue has certain advantages over the Stanford-Binet. The items are grouped (according to the functions which they are supposed to measure) into 11 subtests, with norms and standard scores for each one.

The number of studies which have been performed with pattern analysis on the Wechsler-Bellevue is very large. Most of them deal with the ability to make differential diagnoses by matching the subtest pattern with normative data. Most of these attempts have been disappointing because of frequent disagreement between studies concerning what kind of patterns are to be found in the various types of disorders. Some general agreement may be found, however. For example, most studies agree that schizophrenics do better with the information and comprehension subtests than with object assembly and digit symbol.

The trouble in the area lies partly in the fact that there is so much overlap between diagnostic groups. The use of hospital diagnoses as criteria of validity is most dangerous in view of the lack of agreement between and even within hospital staffs and the doubtful meaning that a diagnostic label carries. The reliabilities of the subtests are also too low in many instances to serve the function of individual prediction.

A number of quantitative indexes have been devised which are intended to differentiate between one or another diagnostic group. For example, Rabin (1941, 1942) devised a schizophrenic index which consists of the ratio of the sum of the scores on information, comprehension, and block design (which are expected to hold up in schizophrenia) to the summated scores on the digit-symbol, object-assembly, and similarities tests. This has failed to materialize as a valid measure.

Wechsler himself (1944) devised what he called a "deterioration quotient" for evaluating the approximate amount of impairment of intellectual functioning in advancing age. Certain tests are presumed to hold up, that is, not decline with age and mental illness, while others do decline. The "hold" tests are information, comprehension, object assembly, picture completion, and vocabulary. Those tests which are believed to decline are digit span, arithmetic, digit symbol, block design, similarities, and picture arrangement. In calculating the index, the total of "don't-hold" scores is subtracted from the "hold" scores and divided by the total of the "hold" scores. The index derived represents, for Wechsler, the percentage of deterioration. This figure is then corrected for whatever loss is expected or normal at the particular age level of the patient, so that the resulting percentage is the extent of loss in excess of expected loss for that age group.

This method has also proved disappointing. Its usefulness probably lies in cases where impairment is extreme. In a study by Fox and Birren (1950), Wechsler's index failed to show any agreement with similar measures derived from the Babcock test. A large proportion of the studies of subtest patterns with schizophrenic patients has produced negative or questionable results. As Wittenborn (1949) has pointed out, even in studies with favorable results, simply inspecting the records for a few conspicuous instances of subtest failure and success would have been as valuable as the more elaborate pattern analyses. At the present time the use of pattern analysis is highly questionable because of conflicting evidence, standardization inadequacies, and the lack of satisfactory reliability among the various subtests. There is no doubt that the situation could be vastly improved. Clinicians are still trying. Recently Copple (1948) devised a somewhat different index which he calls a score of "senescent decline." Few data are as yet available to evaluate this attempt at providing an index of deficit from the Wechsler-Bellevue Scale.

As in the case with the Stanford-Binet, the Bellevue may also be used for scatter analysis as well as pattern analysis. There are several types of techniques available based on different reference points from which the scatter is calculated. In keeping with the observation that vocabulary does not show much loss, one measure of scatter makes use of the differences between the various subtest scores and the score obtained on vocabulary. In addition, the mean of the subtests may be used as the reference point and the deviation of each subtest taken from it. The mean used may be taken from the entire group of subtests, or it may be the performance mean (with deviations obtained for the performance subtests independently) or the mean of the verbal subtests. Finally, pairs of subtests may be compared to determine how much the subject's functioning in one area deviates from that in another.

The fact that the weighted scores on the Wechsler-Bellevue are a form of standard score makes such a procedure possible. However, low subtest re-

liability makes the technique statistically dangerous. As in the case of the Binet, this scatter technique, without pattern analysis, could be useful only as a rough screening device to alert the clinician to take a more careful look at the patient's functioning.

Many sources for discussions of the use of scatter analysis and subtest-pattern analysis on the Wechsler-Bellevue may be found. Some of the more important of these are articles by Wechsler (1944), Rapaport, Gill, and Schafer (1945, 1946), Schafer (1948), Schafer and Rapaport (1944), Hunt and Cofer (1944), Freeman (1950), and review articles by Jastak (1949) and Bijou (1942). A large number of specific studies may be found continually in psychological journals.

Babcock Test. As we have noted earlier, the Babcock test was specifically devised to measure intellectual impairment in individual patients suffering from various forms of mental and organic disturbances. It was originally used with paretics and then with schizophrenics and other clinical groups. The test uses vocabulary as the reference point from which to study loss in efficiency in other functions like new learning, motor skills, immediate memory, and information.

The subtests have been arranged into a number of groups. These groups have been called by Babcock: easy tests (common information), learning, repetition, motor, easy continuous, and initial learning (see Fig. 4). The score for each group is the average of the subtests in it. The total average of all the groups combined is called the "efficiency score." The important estimate of the degree of impairment has been given the term "the efficiency index" by Babcock. This is obtained by converting the vocabulary score on the Terman Vocabulary Test into a vocabulary age. On the basis of this vocabulary age, the expected average level of performance on the groups of subtests is estimated using data from a normal population. The obtained group scores are averaged to find the efficiency score. Subtracting the expected average score from the obtained efficiency score yields the efficiency index. This index may be either positive or negative and in the negative direction indicates the degree of intellectual impairment. If the efficiency index is positive, there is presumed to be evidence of good functioning. The size of the negative index appears to be positively related to the degree of impairment. The most severely impaired organic cases and schizophrenics often have efficiency indexes below −4.

Some clinical psychologists have attempted to use the pattern of subtest performance on the Babcock test for differential diagnosis. They have attempted to find patterns which are characteristic of the various psychiatric classes as has been done with the Wechsler-Bellevue. The general assumptions behind the use of the Babcock test of efficiency are basically the same as in the case of the scatter-analysis technique with the Binet and Wechsler. However, overlapping of profiles and unreliability have made this procedure rela-

Easy tests

Naming the days of the week.
Counting backward from 20 to 1.

Learning

Subject must reproduce from memory as much of the following paragraph as he can: *

December 6th / last week / a river / overflowed / in a small town / ten miles / from Albany. / Water covered the streets / and entered the houses. / Fourteen persons / were drowned / and 600 persons / caught colds / because of dampness / and cold weather. / In saving / a boy who was caught / under a bridge / a man / cut his hand. /

Motor

Subject must write the following sentences which are timed to measure motor speed:

a) United States of America
b) Subject writes his name

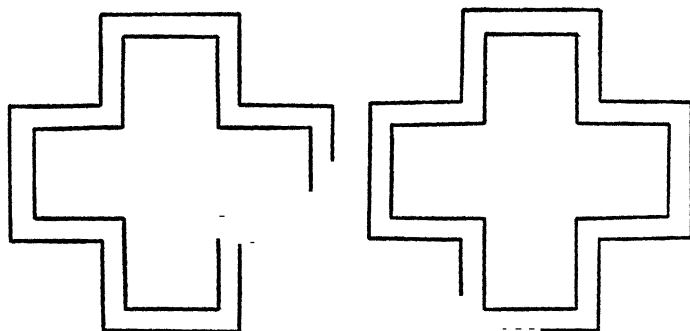
Subject must draw a line all the way around the following crosses as quickly as possible without touching the printed lines

* Diagonal lines enclose single memory units.

Fig. 4. Examples of items on the Babcock-Levy Mental Efficiency Test. (From Babcock-Levy. *The revised examination for the measurement of efficiency of mental functioning*. Chicago: Stoelting, 1942. By permission of the publishers.)

tively unrewarding up to the present, just as we have found to be the case with the Wechsler-Bellevue. In the future the use of newer types of tests may make this approach more fruitful.

Shipley-Hartford. Some brief mention should be made of this test which is also based on the Babcock principle. It has very limited value because of relatively poor standardization and discriminative power and because it re-

quires a rather high vocabulary level and superior intelligence to take successfully. Although the data obtained with the test indicate that chronic psychotics usually show losses and early psychotics may not, the authors nevertheless claim to have intended the test for early and mild cases of disturbance.

The Shipley-Hartford consists of two parts, a vocabulary subtest and an abstraction subtest, both of gradually increasing difficulty (see Fig. 5). An index of impairment is obtained by dividing the abstraction age by the vocabulary age times 100. This index is called the "conceptual quotient." Quotients much below 100 suggest the existence of various degrees of impairment depending upon the actual value obtained.

Subject must complete the following. Each dash (–) calls for either a number or a letter to be filled in.

Item (3)	AB BC CD D–
Item (4)	Z Y X W V U –
Item (7)	escape scape cape – – –
Item (11)	mist is wasp as pint in tone – –

Fig. 5. Examples of items from the abstraction subtest of the Shipley-Hartford Scale. (From Form #2713, 1939. Published by The Institute of Living, The Hartford Retreat, Hartford, Conn. By permission of the publishers.)

As it stands now, this test really adds mostly dead weight to the clinician's already heavy satchel and should be dropped from clinical use. However, the idea of using the Babcock principle to obtain a rapid and easily scored estimate of deficit is an excellent one. It may be worth while for someone to revise the test by making it simpler and doing a thorough job of standardization.

Hunt-Minnesota. As in the Babcock, the principle behind the construction of this test is the stability of vocabulary in old age and in organic brain damage. The Hunt test consists of three parts, a vocabulary test (Terman, 1937), six immediate and delayed-recall tests (the scores of which are compared with vocabulary to obtain an index of impairment), and nine interpolated tests (*e.g.*, information, number counting, an attention test, digit span, and naming months in reverse order). These nine interpolated tests are called the "validity indicators" because patients who are unable to perform them are too uncooperative, disturbed, or deteriorated to produce results which can be properly interpreted.

As in the case of the Shipley-Hartford Scale, this instrument is of very limited value because the author did not spend the time necessary to obtain adequate norms and validity data. Only 33 patients and 41 controls were

used in the standardization population. While the test did discriminate reliably between the two groups, the overlap was so large that its use for individual diagnosis is extremely hazardous. The use of the validity indicators represents the real contribution of Hunt's test to the testing of psychotic patients. It is an old psychiatric idea which could have considerable usefulness in diagnostic testing. With revision and the outlay of the necessary labor, the Hunt-Minnesota type of test could be of value in providing a rough estimate of a patient's intellectual deficit.

Concept Tests. As a result of his observations with aphasic patients over a period of many years, Kurt Goldstein has suggested that patients with brain damage show a characteristic loss in abstract ability. He has repeatedly suggested that cerebral lesions always produce this single basic change in functioning. While Goldstein's generalization has been challenged frequently, it has led to some work on the construction of tests designed to measure roughly this abstract loss. The primary purpose of these tests is to pick out patients with organic brain damage.

Goldstein has been a main contributor to the concept tests along with his collaborator Gelb, from whom he borrowed heavily. From the work of these men there has emerged a series of five tests aimed at the identification of patients with brain lesions. These are: the Goldstein-Scheerer Cube Test; the Gelb-Goldstein Color Sorting Test; the Goldstein, Gelb, Weigl, and Scheerer Object Sorting Test; the Weigl-Goldstein-Scheerer Color Form Sorting Test; and the Goldstein-Scheerer Stick Test. In a monograph by Goldstein and Scheerer (1941), the use of these tests is described. In addition another test originally designed in 1934 by Vigotsky and later adapted and used by Hanfmann and Kasanin (1942) has been frequently used in the diagnosis of brain damage and schizophrenia.

While these tests have a similar rationale to the deficit tests we have described above, they do not use a reference point against which to compare the individual's abstract functioning. In concept-formation tests it is assumed that the normal subject should be able to solve the problems adequately if he does not have brain damage. The measurement has been an all-or-none affair. The patient's performance is in reality compared with norms in only a qualitative sense. Experience with normals on the tests indicates that most of them can perform at the abstract level to pass them.

Despite their differences, the basic principle behind these tests is very similar to the principle on which pattern and scatter analysis rest. Patients who have brain lesions are expected to show a dependence on concrete forms of behavior and to fail in the abstract functions. This is essentially saying that some functions are impaired (abstract ones) and others are retained (concrete ones) in patients with brain lesions.

Observations of schizophrenic patients indicate that they, like organics, also fail in the concept tests. The differentiation between an organic patient and

a schizophrenic patient cannot therefore be made on the basis of these tests. Other signs must be used. Often the differentiation is made on largely qualitative features like bizarre behavior and lack of the apparent anxiety which characterizes most organic cases. Although they have some value, the concept tests are only suggestive in diagnostic use. Errors of classification are frequent even when the tests are carefully applied. We shall briefly describe each of the concept tests used in the clinic.

The *Cube Test* was constructed to determine whether the patient can abstract a small design of different colors and copy it in a larger size with four Kohs blocks. The blocks are cubes, colored so that one side is blue, one red, one yellow, one white, one blue and yellow, and one white and red. On the side with the combination, the two colors are divided diagonally across the cube. There are 12 designs to be copied, all of them except one having been taken directly from the Kohs blocks series.

The patient may deal with the Cube Test problem on a concrete or abstract level. He can succeed at an abstract level by making the correct solutions without the aid of a graded series of modified designs which the tester may introduce to help the patient. These modifications for each design, which are not introduced unless the patient fails, involve an enlargement of the model to actual block size, an emphasis on the part relationships by drawing in lines where the separations between the blocks would be, and finally, if these fail, the introduction of a model out of the actual blocks. These aids make the process of abstraction, which the organic patient finds difficult, unnecessary for the solution of the problem. Organic patients have difficulty even when aided by the modified models. There are no objective-scoring criteria to the test. Degrees of impairment may be inferred from the amount of help needed to copy the models or the failure to profit from this help altogether.

The *Color Sorting Test* requires the subject to sort a set of woolen skeins according to color concepts. The test has four parts. In the first, skeins of different hues and saturations are presented at random to the subject. The testee selects any one and then is asked to pick out of the group all other skeins that go with the one he picked. In part two, three skeins are presented, two of the same hue but differing in saturation and brightness. The third skein differs in hue from the first two, but is of the same saturation or brightness as one of the first pair. The subject is expected to make a selection of which go together on the basis of hue, saturation, or brightness. In the third test the patient is presented with a series of six samples of the same hue, but varying in brightness from lightest to darkest, and a second series of different hues but equivalent brightness. The patient is asked to identify the common quality in each series. In the fourth test, the subject must select all the red skeins, or all the green skeins. In each test the subject is always asked the reason for his particular groupings.

Feeble-minded patients or those with abstraction loss, that is, those who perform at the concrete level, fail to sort on the basis of some concept but employ concrete matching procedures (such as matching on the basis of skein length), or make no attempt at solution at all. The intact individual usually deals with each test by selecting groups of skeins on the basis of some concept—that is, color, saturation, or brightness—without regard to the other aspects. For example, in the first test the subject may select a red skein and sort with it any skein that contains red, regardless of brightness or saturation. When questioned he will answer that he selected all the red wools. Patients with organic injury often have difficulty with such abstract concepts as color. Here again, no quantitative scoring system has been provided by the authors. The patient's behavior is identified by the examiner as either concrete or abstract.

The *Object Sorting Test* consists of a group of 30 common objects which are randomly arranged on the table before the subject. It was designed to determine whether a person can sort in accordance with some general concept, shift from one concept to another, and determine the principle of a grouping that is demonstrated by the experimenter.

First the subject is told to pick out any object from the 30. Then he must select all the other objects that he believes should be grouped with the one he picked out. After this has been done, the experimenter selects some of the objects one at a time, asking the subject to add others that belong to the one picked out. Then the subject is asked to put all the objects into groups of his own choosing. When the subject has made his own groupings, he is urged to find still other kinds of groupings. Finally the examiner himself makes a number of groupings and asks the subject to name the concept (class) by which the groupings have been made. In each aspect of the test the subject is always asked to explain his actions to help determine whether he has proceeded on an abstract or concrete basis.

The sorting test may be administered in a number of ways since no standards of administration and scoring are given by the authors. The sorting task is apparently simple for normal individuals and even children of 8 or 9 years of age. Mentally deficient subjects, schizophrenics, and brain-injured patients often fail to sort according to abstract concepts.

Rapaport and his coworkers (1945, 1946) have worked out a somewhat more quantitative technique of scoring the test to determine for any subject the adequacy of the sortings, the conceptual level of the verbalizations, and the concept span, that is, the inclusiveness of the grouping in terms of looseness or narrowness. For example, if the subject selects objects to go together which do not readily belong or which make the concept too wide, the subject is displaying a loose span. If, on the other hand, the concept includes too little, it is described as narrow. With this type of approach, the test has been used in the clinic with a great variety of types of patients as a

means of identifying clinical syndromes. Schafer (1948) has described the use of the test in this fashion in a clear and useful way and has provided abundant illustrative case material.

The *Color Form Sorting Test* follows the same principles as we have seen in Goldstein's other diagnostic devices. It consists of a dozen blocks of three shapes (triangle, square, and circle) and four colors (red, yellow, blue, and green, with the reverse sides white). The subject must first arrange them into groups. He may do this according to color or shape, or may put them into piles to form some irrelevant groupings on the basis of structure (concrete behavior). When he is asked to group them in terms of a different principle, the concept-damaged individual may show failure to shift from one concept to another, even if he has correctly sorted them in the first attempt by either color or form. Moreover, in his verbalizations, he may be unable to identify the basis of his action. Evaluation of this test is also qualitative.

The *Stick Test* requires the patient to copy printed figures with a set of plastic sticks and then do the same task from memory after a brief exposure to them. Thirty-four figures are presented in a rough scale of difficulty in terms of the number of sticks involved and the complexity of the model. As with the other tests, the patient must explain his action.

The brain-injured subject is likely to identify the stimulus figures in terms of some concrete everyday objects and in severe impairment even distort it in copying so that it is more like the concrete object perceived. For example, presented with a figure like this ∧, he may describe it spatially as two diagonal lines meeting at the top, or he may call it a roof, which he then proceeds to make with the actual sticks. The latter case represents a tendency to perform at the concrete level. The examiner must evaluate the extent of the concreteness without the benefit of norms or scoring devices.

Prominent among the instruments which have been used to study concept formation and impairment in abstract behavior has been the *Hanfmann-Kasanin Test* (1942), originally improvised by Vigotsky in 1934, to study schizophrenic thinking. The idea is quite similar to the color-form test. However, it suffers clinically from being so difficult that only people of the highest intelligence level are able to perform it adequately. The test consists of 22 forms in 5 different colors, 6 shapes, 2 heights, and 2 widths. The subject's problem is to sort these forms into four categories according to the principle of volume. The four categories, each labeled with a nonsense syllable, are: tall-wide, flat-wide, tall-narrow, and flat-narrow. The entire set with the nonsense syllables hidden on the reverse side of each block, is put before the subject in a random fashion. The experimenter selects one of the blocks and instructs the subject to pick out all the others that go with it. If the subject sorts according to color, shape, height, or width, he will find more or less than four categories. With each error in sorting he is corrected by turning the blocks up and revealing the nonsense syllables one by one until the sub-

ject correctly classifies them all. He must then state the principle of the sorting.

Three levels of performance on the test may be differentiated, depending upon its concreteness. The approach, the amount of help necessary, the successful solution, and the verbalization of the principle at the end determine the evaluation of the subject's performance. As we have seen with other tests of this kind, the technique is primarily a qualitative one, although the task has been submitted to quantitative scoring and simplification. Some clinicians have used the test to obtain observations of the manner in which a patient approaches difficult problems. Such characteristics as persistence, reaction to frustration, and flexibility and rigidity have been observed.

Recently, Zaslow (1950) devised a test of sorting behavior which consists of a series of geometric figures ranging in a quantitative scale from a triangle to a circle with fine graduations in between each figure. The subject is presented with the series of figures in one row and must say where the triangle ends and the circle begins. In addition to qualitative behavior in response to this problem, Zaslow points out that a quantitative score of sorting looseness or rigidity may be obtained from this test by counting the number of figures left in the middle grouping. The test may prove useful for some purposes, although too little work has been done with it to allow a present evaluation.

The authors of this series of concept tests which we have described have never made any adequate attempts to standardize their instruments and rarely concerned themselves with the problems of scoring except in a qualitative sense. In cases of severe abstract loss they appear to have some value. The theoretical basis of the method has been open to some question, and the discriminative power of the instruments leaves much to be desired. The concept tests have been criticized mostly for the absence of norms and the lack of reliable, quantitative scales with which to evaluate the performance of individuals. There is no doubt that there are huge individual differences on the part of testees in their manner of approaching the concept tests and their success in dealing with them. These differences appear to be related in some cases to intelligence, in others to the type of disturbance and personality organization. The general problem is a potentially fruitful one. It is a special case in the study of the relationships between the intellectual processes and personality.

Critique of the Measurement of Deficit. In this section we shall try to deal with the various assumptions and technical difficulties involved in the current approaches to the measurement of intellectual deficit. Our emphasis shall be placed on generalized technique and theory rather than on particular instruments.

Psychological measurements, particularly as they apply to cognitive functions, may be analyzed in four main ways: (1) Interindividual and inter-

group analysis on any single function, that is, John has a higher IQ than Jim, or schizophrenics do more poorly than normals. (2) Intraindividual analysis —John is better at the verbal aspects of intellectual performance than he is on the perceptual-motor side. (3) Interindividual and intergroup comparisons of qualitative features in performance such as reaction time, etc.—John approaches the task confidently while Jim expresses strong anxiety about the outcome. (4) The response variations of a person within each subscale of a test. This type of analysis is analogous to approach 2 above, in which the absolute level of total performance is considered less important than the variability within the individual and within different instances of performance on the same function. As an example of this latter case we might cite Lazarus, Eriksen, and Fonda (1951) who have noted that a patient who is threatened by aggressive impulses may show different perceptual accuracy for aggressive stimuli than he does for neutral stimuli even though both perceptual tasks are comparable in difficulty. In other words, the function of perceptual ability shows systematic variation within the individual, depending upon the emotional implications of the stimuli to be perceived. Jastak (1949) points out that ignoring such response variation within individuals means throwing away some of the most important data from which an analysis of the personality and the functioning of the individual could be derived.

Some of the assumptions and technical problems which arise in the measurement of intellectual deficit apply to all four of the approaches described, while others are specific to particular ones. Approaches 1 and 3 are more similar in that they are both interindividual. Approaches 2 and 4 have a great deal in common, since they both require examination of intraindividual patterns. The latter two are particularly useful to the clinician, since they are so closely bound up with the problems of individual diagnosis. We shall organize our critical discussion of the measurement of deficit and the clinical use of diagnostic patterns around the following considerations: the functions measured, reference points, standardization, diagnostic classification, and reliability.

Functions Measured. In Chap. 4 we discussed some of the confusions and disagreements which have arisen concerning the nature of intellectual behavior. We also dealt with the question of what our various tests actually measure. It is not nearly enough to be able to say that schizophrenics tend to fail on tests which involve the task of finding similarities. In order that some light may be thrown on the intellectual process in disturbed patients by this observation, it is important to know something about how the task of finding similarities is related to other kinds of intellectual measures. In other words, the functions which we measure must themselves be fully understood in order to make this finding theoretically meaningful. Some psychologists have attempted to make a start in this direction through intercorrelational or factor-analysis techniques. Some of the limitations of this approach have

been mentioned in Chap. 4. Yet it does at least offer something more solid than the intuitive approach on which clinical psychologists have entirely depended for many years.

The theoretical difficulties encountered by our lack of complete knowledge concerning the nature of our various tests afford a major stumbling block in the diagnostic use of patterns of performance within individuals The tests we have available today have been constructed by the use of a priori, intuitive classifications of the intellectual functions and on the basis of empirical prediction. The Binet, for example, is most inappropriate for pattern or scatter analysis. The test is a hodgepodge of different types of subtests scattered almost at random. Major disagreement may be found as to which subtests should be grouped together in analyzing the types of tasks failed by various types of patients.

Most important of all, the subtests of the Binet are quite homogeneous. McNemar (1942) in factor analyzing the test found all the items to be heavily saturated with one general factor. To the extent that each subtest is measuring a high percentage of the same thing, pattern analysis is inefficient. Subtest heterogeneity is needed before a study of intertest patterns (and therefore the measurement of differential functioning within the same individual) is meaningful. *The paradox is that to establish that actual deficit or impairment of function is present requires that the premorbid reference point* (e.g., *vocabulary) be highly correlated with the other subtests under conditions of normal mental functioning. However, in order to make use of patterns to study differential functioning, it is most efficient to employ uncorrelated subtests; the pattern must then be related to other personality variables. To require both functions of the same test works against the efficiency of each.*

Probably none of our present-day tests approach the ideal of subtest heterogeneity. Even the subtests of the Wechsler-Bellevue are highly intercorrelated. The Wechsler comes closer to the type of test which could be used for pattern analysis. Although the ideal of pure tests will probably not be achieved, substantial improvements are likely to be made in the direction of more clearly specifying the functions that are being measured and obtaining greater independence among the subtest measures.

Reference Points. As we have elaborated earlier, the study of intertest patterns and scatter developed out of the observation that some subtests appear to hold up and others to show losses in the performance of patients with various mental diseases. Reference points like vocabulary and information from which the scatter or index of efficiency (Babcock) is obtained have their own very severe limitations. Although no one would maintain that vocabulary is not reasonably resistant to impairment, as a good estimate of premorbid capacity it is somewhat questionable. Its use depends, for one thing, upon the definition of intelligence. There is, of course, no real justifi-

cation in saying that a man with a poor verbal level and a very high performance level has low intelligence. The vogue of using verbal ability as an index of intelligence has serious weaknesses. A person with low verbal and high performance ability might be classified, in our present tests of deficit, as unimpaired if vocabulary were used as a reference point for scatter whatever his state of mental health may be. Even if he had suffered an intellectual loss, this might be obscured because of the initial discrepancy between vocabulary and other functions. This illustrates the need for a high relationship between the reference point and the critical measures of deficit. With our present procedures of using vocabulary as the reference point, we might often be misled in our diagnoses.

Reference points other than vocabulary have been used in scatter and pattern analysis. As we have noted before, the use of the mean of all the subtests or separate means for the verbal and performance subtests as reference points from which to determine impairment has been popular with some clinical psychologists. The main problem here is that this mean is influenced by the deficit, since it is made up of some of the tests which show the extreme deviations. The use of any type of mean reference point is bound to attenuate the deviation because it is affected by the impairment itself.

The various indexes that have been suggested, such as Rabin's schizophrenic index (1941, 1942) and Wechsler's hold–don't hold technique (1944), are probably on the right track, particularly if they are modified to be ratios instead of difference measures. They need not suffer from the limited definition of premorbid intelligence that is implied in the vocabulary measure, and at the same time they provide a rational approach to the estimate of premorbid capacity. The problem appears to be one of deciding which measures should be used. These must be functions that really hold up during illness and correlate well with the tests used to indicate intellectual loss. Rabin's and Wechsler's attempts were intuitive and partly empirical guesses about what kinds of clusters to use in the analysis. Babcock and Levy's (1942) division into learning, memory, and psychomotor tests was still another guess. The approaches of all three are quite similar and have some validity. But the validity is still too low to provide satisfactory clinical prediction.

Jastak (1949) and others have suggested that the selection of clusters can be made more effective by factor-analysis procedures which will allow us to group subtests on the basis of their observed intercorrelations.

Birren (1951) has recently presented evidence supporting in part some of the clinical hunches about the diagnostic groupings of the subtests of the Wechsler-Bellevue. In a factor analysis of the test using elderly people, he found that subtests containing a verbal factor like vocabulary and information declined with age less than those which had high factor loadings on visual factors (block design, object assembly, etc.). The reader will recognize that this is, indeed, roughly the kind of grouping which has been sug-

gested by a number of clinicians interested in the diagnosis of intellectual deficit.

The authors tend to agree that more attention must be paid to these intercorrelations. Whether factor analysis is used or not, selection of subtests and clusters of subtests for the purpose of pattern analysis must depend upon the interrelationships found among our various measures. The technique of intercorrelational analysis is not a method of discovery but really a check on the efficiency of our test batteries. It cannot tell us which types of functions we would like to call intelligence, but it can help us decide whether two particular tests measure similar things or whether they are reasonably independent.

Standardization. Whether intraindividual or interindividual approaches are used, norms must always be provided as a standard against which to interpret a particular score or pattern. It does not help us to know that a patient does better in performance tasks than in verbal tasks unless we know what to expect from other people with various personality characteristics.

One of the great deficiencies of the measurement of deficit has been the lack of adequate standardization of the patterns and deficit scores. Much of this is the result of difficulties in getting large and homogeneous populations to work with. The average clinical psychologist is limited by the particular clinic or hospital population with which he works, as well as by his own lack of time to do the enormous labor involved in the standardization of these kinds of measures. In many instances the lack of norms seems to be a matter of the failure to appreciate the need.

To further complicate matters, there are tremendous problems concerning the classification of patients according to mental diseases. The classifications are extremely variable from hospital to hospital and even within the same institution. Moreover, the same patient will behave quite differently while in different phases of his psychosis. The degree of contact evidenced by one schizophrenic patient may be considerably different from that of another.

All these factors conspire to make the normative problem very difficult to solve. In a large measure they account for much of the confusion and disagreement between the various studies of deficit. If normative studies do not agree concerning the type of pattern shown by the obsessive-compulsive or hysteric patient, for example, then pattern analysis cannot be used fruitfully in diagnostic work.

Diagnostic Classification. Many writers, including the present authors, believe that part of the difficulty in this area lies with the present system of diagnostic classification. The validity of most of the pattern-analysis techniques has been tested on an outworn and unreliable system of classification. While almost everyone seems to agree that we should describe a patient in terms of the dynamics of his problem, that is, a description of the motive systems and ways of dealing with conflict that the patient uses, clinical psy-

TABLE 5. THE TEST-RETEST RELIABILITY OF THE WECHSLER-BELLEVUE REPORTED IN THE LITERATURE AND IN THE PRESENT STUDY*

Author	Gibby† (5)	Rabin (13)	Hamister (7)	Rabin (14)	Hamister (7)	Rabin (13)	Canter (1)	Aborn and Derner	Aborn and Derner	Canter	Aborn, Derner, and Canter
Population	Psycho-neurotics	Schizo-phrenics	Schizo-phrenics	Miscel-laneous diagnoses	Miscel-laneous diagnoses	Miscel-laneous diagnoses non-schizo-phrenics	Multiple sclerotics	Normals, 1-week retest	Normals, 4-week retest	Normals 6-month retest	Normals, com-bined average
N	32	30	34	60	53	30	47	60	60	38	158
	Coefficients of reliability										
Subtests											
Information	.56	.89	.94	.99	.94	.89	.81	.87	.84	.87	.86
Comprehension	.20	.12	.78	.44	.76	.62	.76	.70	.74	.77	.74
Digit span	.65	.62	.63	.77	.59	.75	.73	.67	.70	.64	.67
Arithmetic	.76	.75	.87	.68	.87	.73	.74	.57	.53	74	.62
Similarities	.71	.38	.84	.62	.86	.79	.93	.65	.76	.70	.71
Vocabulary	.93	. . .	.90	. .	.90	.	.90	.91	.88	.83	88
Picture arrangement	.49	.54	.78	.60	.73	.73	86	.68	59	66	.64
Picture completion	.87	32	.68	.89	.71	.80	.73	.80	.85	82	83
Block design	.87	.71	.67	.65	.71	.70	.82	.88	.84	.78	84
Object assembly	.53	.31	.62	.67	.66	.79	.74	.73	62	.73	69
Digit symbol	.81	.34	.79	.74	.80	.91	.90	.78	.76	.85	80
Scales											
Verbal IQ	.76	.78	.91	.89	.91	.87	.84	.84	.84	.84	.84
Performance IQ	.82	.52	.80	.76	.83	.94	.90	.88	.83	.87	86
Full scale IQ	.87	.55	.84	.84	.87	.89	.90	.91	.87	.91	90

*From Derner, G. F., Aborn, M., and Canter, A. H. The reliability of the Wechsler-Bellevue subtests and scales. *J. consult. Psychol.*, 1950, **14**, 177. By permission of the publishers.

†Comparison of Forms I and II, not test-retest.

chologists are still validating pattern analysis against psychiatric diagnosis as the criterion.

A good example of this approach to the validation of patterns is a study by Levine (1949). Using a group of judges he obtained significant agreement between the psychiatric diagnosis of schizophrenia and the Wechsler-Bellevue subtest pattern. But an examination of the degree of agreement suggests that this diagnostic technique could hardly be practical in a clinical situation. For example, averaging the results of all judges, the agreement was 63.18 per cent. Chance agreement would have been 51.2 per cent. The amount of error in this most simple two-category problem (is the patient schizophrenic or not?) was nearly 37 per cent. It is impossible to tell whether the subtest patterns are inaccurate, the diagnostic labels are incorrect, the judges are inept, or all three. Why should we assume that such diagnostic labels are any more correct, reliable, or meaningful than the very scatter patterns which we derive from the patient's performance? Overdoing this kind of validation procedure seems to us to be attempting to check one doubtful concept against another which is certainly just as questionable. It is high time that clinical psychologists seriously abandon the use of the old diagnostic labels for this purpose. The alternative is, indeed, a most difficult kind of undertaking and a challenge to the modern research clinician.

Reliability. One of the basic reasons for the weakness in the pattern-analysis technique is the low reliability of many of the subtests. However good the rationale for this sort of analysis may be, if the error of measurement of each subtest is large, then the entire procedure must have low validity. In other words, we could never be sure we have obtained a reasonably true measure of an individual's level of performance on some psychological function. Often the entire test will show satisfactory reliability, while the individual subtests may not.

One example of this state of affairs is the Wechsler-Bellevue Intelligence Scale, which, as we have noted, is an extremely popular instrument for the use of scatter and pattern analysis. Derner, Aborn, and Canter (1950) have recently provided a table of reliability coefficients obtained from a large number of studies with the Wechsler test which have used different kinds of subject populations.

Examination of Table 5 suggests several things, as Derner, Aborn, and Canter have pointed out. The use of normal populations gives generally higher reliabilities than the use of patients, particularly in some of the subtests. Since the test is used largely with patients, the disturbingly low reliabilities in some of the subtests are bound to mean considerable error in interpretation even if the theoretical validity of the technique itself is perfect. Moreover, even in the normal populations, reliability varies tremendously depending upon the subtest involved. The most stable subtests among normals seem to be vocabulary, information, block design, picture completion,

and digit symbol. Such subtests as object assembly, digit span, picture arrangement, and arithmetic are extremely unstable and unsuited for this reason for use in individual prediction. Reliabilities below .80 mean that the error of measurement of a test becomes so large that it makes any interpretation of the results hazardous.

What we have said about the Wechsler-Bellevue subtests may be said also of most of the tests used in the measurement of psychometric patterns for diagnosis. In some instances, this vital information is neither supplied by the authors of the test, nor available through others' research. The obvious conclusion is that, if clinical psychologists expect to find dependable techniques of subtest pattern analysis, they must work at devising scales with more reliable subtests.

Summary. We have tried to show some of the reasons why the area of intellectual deficit, particularly as it applies to the problems of individual evaluation, has been so confused. Workers in this field have tended to disagree on the theoretical and often semantic question of what functions they are measuring with their tests. They have used intertest and subtest pattern analysis when the various measures were highly intercorrelated and probably measured much of the same things or when the interrelationships were unknown. In pattern and scatter analysis, questions concerning what sorts of reference points should be used for the determination of impaired performance remain unsettled. In validating diagnostic procedures which make use of measures of capacity, clinical psychologists have also used an unreliable and outmoded system of psychiatric classification as the criterion of the adequacy of the instruments. Finally, even if the bases of the procedures used in diagnostic pattern analysis were entirely sound, the results of the present work would need overhauling because of the unsatisfactory reliabilities of many of the subtests used.

We believe that, despite the difficulties we have discussed, the study of the intellectual functioning of the normal and mentally disturbed individual offers a very bright future for the understanding of the processes involved in illness in general and for the diagnosis of the individual patient himself. While our measures are by no means perfect, their improvement is not only possible, but worth while. It is important that the clinician, who has so much to offer psychology because of his continuous contact and vast experience with the pathological mental states, sharpen his tools of measurement so that they can be more effectively used to study the individual's pattern of intellectual functioning.

CHAPTER 6

THE NATURE OF PERSONALITY

There is no single personality theory to which all psychologists, even all clinical psychologists, will subscribe. As it turns out, there are a great many conceptions concerning the nature of personality. As the student wades through the hundreds of thousands of pages which have been written on the subject, he may wonder whether each of the writers is talking about the same thing. Each new treatise confronts him with a bewildering mass of new and often obscure terminology. Terms like ego, trait, habit, need, type, syndrome, phenomenal field, and dynamics pop up at him continuously. He has a sneaking suspicion that many of these concepts mean the same thing and that some of the differences among theories are rather hard to fathom. It is a difficult struggle to make sense out of what he is reading and to organize his thinking about the large variety of viewpoints.

There is really no systematic bit of source material to which the student may go to have the mysteries of personality theory unraveled for him. But it is of very great importance that he have a good comprehension of the relationships between the different points of view. Real understanding of clinical practice and research depends upon this knowledge. This is because the research reports and measuring devices in this field depend upon some theoretical orientation about the nature of personality. As we have stated in an earlier chapter, even the way in which interview, case history, and test materials are interpreted is greatly affected by one's theoretical orientation.

In this chapter we shall undertake the task of surveying the most important theoretical approaches to the nature of personality. After we have reviewed each point of view, we shall present an overview so that the reader may obtain some perspective of the entire field. Additional material may be found in a chapter by MacKinnon (1944). Discussion of personality theories may also be found in a large variety of books on mental hygiene, psychological testing, clinical psychology, and general psychology. Systematic books on personality have been written by Fenichel (1945), Lewin (1935, 1936, 1938), Allport (1937), Stagner (1948), Murray (1938), Hunt (1944), Symonds (1946), Murphy (1947), Snygg and Combs (1949), Harsh and Schrickel (1950), and Cattell (1950).

There has been a tendency to isolate personality study from other fields of

psychology. Our introductory textbooks usually have separate sections for such topics as cognitive processes like learning, perception, and thinking; conative processes which include drives and motive systems; and affective processes which include feelings and emotions. Often at the end of the book is a section devoted to individual differences which contains short discussions of intelligence and personality. While it may be argued that such an organization is useful because of its convenience and simplicity, it is likely to carry the connotation that learning and perception, for example, are separate entities which bear little or no relation to the thing we call "personality."

In fact, in trying to find rules for the cognitive, conative, and affective processes, psychologists have usually measured central tendencies, *i.e.*, what people in general are like. This has often obscured important problems in individual differences. In research which aims to discover these rules, the exceptions to the norm have usually been ignored. We are beginning to wonder whether these individual differences, which have been recognized for so long, may be more important in studying basic psychological processes than has been thought. Individual differences are basic data of personality study. Concentration in personality research is primarily on the individual who is learning rather than on the process of learning itself.

There are two aspects of personality theory which tend to be confused. One concerns the question of the nature of personality, and the other involves the problem of its development. The first task of the personality theorist is to decide what kinds of psychological events to observe and to find ways of organizing these observations in some systematic way. He must, in effect, decide what events to study and how these events should be described. He may select descriptive units like stimulus-response elements, habits, and habit systems; or he may speak of traits of various kinds, or types, or factors, or dynamics, or symptoms and syndromes, or styles, or mechanisms, or needs-press combinations, or the life space, or the phenomenal field. These units are simply ways of classifying and naming certain kinds of data. They are derived from the observation of the behavior of individuals in a great variety of situations. The descriptive units may emphasize responses of people, situations in which people behave, motives, or combinations of these. This is the defining aspect of personality theory. The problem is: "What is the nature of personality? How may it be described?"

On the other hand, whatever the unit one wishes to use in personality description, the problem remains for it to be accounted for in some way. Personality theories are therefore concerned with the explanation of behavior or personality characteristics as well as its description. The question which must be asked is: "How did the person get that way?" The explanation may be in terms of genetics, constitutional factors, learned response tendencies, physiological considerations, instincts, situations and culture, or any combination of these.

It is clearly beyond the scope of this book to survey the theories about the development of personality. While our emphasis in this chapter will be on the problem of the nature of personality, that is, personality description, we must say a few words about its determinants. Perhaps more has been written about this latter problem of how the personality got that way. This is certainly the more difficult question of the two. While it cannot be effectively discussed without some answer to the question of the nature of personality, it is probably the ultimate problem for psychologists.

The question of what kinds of variables are important in personality development produces some general agreement among psychologists. These variables have been put into two general classes: biological and social. In the former category, metabolic factors, physique, special hereditary factors, and endocrine balance are some of the variables which have been investigated. In the social category, family relationships, economics, school experiences, and cultural values have been studied by a variety of techniques. Each of these variables is itself complex. We have begun to realize that methods which yield only the manipulation or observation of single variables are apt to be less useful than those which offer the opportunity to study the processes of interaction of the various personality determinants. Whatever one's point of view may be, the identification and evaluation of the many interacting determinants of personality seems to offer an interminable but exciting road ahead.

Theoretical approaches to the nature of personality differ, therefore, in two main ways. The descriptive unit may vary, or the explanation for the existence of that unit in its particular form may be the main difference. As an illustration of this point, the descriptive unit "trait" could be understood as a learned habit, a biological disposition, or a combination of these. The main portion of this chapter will deal with the various viewpoints concerning the nature of personality, that is, how personality is defined.

THEORETICAL APPROACHES

As in the case of intelligence, there have been many attempts to define personality. These have come from philosophers, lawyers, sociologists, and psychologists. In reviewing the literature on the history of the concept personality, Allport (1937) has identified 50 different meanings of the term. He points out that two opposing emphases in these definitions stand out: *mask* approaches and *substance* approaches. In the former case the emphasis is on the superficial aspects of behavior, the outward appearance or stimulus value of the individual. The latter class of definitions centers around the underlying nature of the person, that is, the basic determiners of the behavior patterns which are characteristic of him.

The term personality actually comes from the Latin word, *persona,* which originally referred to the mask which ancient actors wore to indicate their roles in a theatrical play. Therefore "mask" definitions of personality refer to the more superficial behavior or stimulus value of the individual. This is the kind of usage which is common in our everyday language. We say, "This fellow has a wonderful personality."

The inadequacies of the mask definition are really twofold. If we describe personality in this fashion, we become involved in the various tastes of the different observers. Moreover, we recognize that similar behavior may arise out of vastly different motives, and a similar motivation may lie behind very different kinds of outward behavior. Observations of outward behavior characteristics like honesty, aggressiveness, and sociability give us a very limited understanding of the individual we are observing. These are merely descriptive statements, which while important present only a very small part of the story.

Personologists who emphasize a *substance* approach to the nature of personality usually attempt to conceptualize about the organization of the behavior tendencies of the individual and their determiners. They usually make use of hypothetical constructs to make the superficial behavior of the organism more meaningful. These constructs are processes which are hypothesized to exist but cannot be observed directly. In other words, they are imagined or inferred from behavior. Such theorists frequently use terms like inner states, determining tendencies, forces, motive systems, mechanisms, processes, structures, and the like. This sort of approach tends to dominate modern-day personality theory.

The use of hypothetical constructs has been most helpful to the clinical psychologist who usually finds this way of conceptualizing about behavior and personality more satisfactory than a more behavioristic orientation. The old-line behaviorist has looked upon the use of such constructs as unscientific. There is no doubt that this kind of approach is more vulnerable to fuzziness and mysticism. However, as behavioristically oriented psychologists came to deal more and more with the most complex behavior situations, they became increasingly ready to accept hypothetical constructs as useful and necessary in understanding and predicting human behavior. The methodological problems surrounding the use of constructs have been frequently discussed in the recent psychological literature. We have very briefly discussed this topic in the chapter on methodology. Some of the psychologists who have treated the problem from different points of view are Tolman (1936, 1938), Spence (1944, 1948), Hull (1943), Rosenblueth and Wiener (1945), Feigle (1945), MacCorquodale and Meehl (1948), and Marx (1951). Since this is a major issue in the development of theories concerning the nature of personality, let us look at this question as it relates to personality a little more carefully.

Mask approaches to personality description have persisted because of the great influence which the behavioristic movement has had upon American psychology. In a militant effort to avoid the pitfalls of subjectivism and to make psychology scientific, the early behaviorists attempted to confine psychology to the study of objective behavior. The behaviorists believed that it was possible to build a psychological system out of the conditioned reflex which was discovered by Pavlov. Limitless combinations of stimuli and responses could be made to account for all human behavior. The beauty of such an ideal lay in the fact that such a system would deal only with objectively measurable stimuli and responses. The pitfalls of the earlier subjective approach to experience used by Titchener and the introspectionist psychologists, as well as the mysticism of the Freudians and the philosophers, could be avoided by a behavioristic orientation.

One of the consequences of this approach was the development of personality description which dealt with only the superficial responses of human beings. Watson (1924), who was the early leader of behaviorism, defined personality as "the sum of activities that can be discovered by actual observation over a long enough time to give reliable information. In other words, personality is but the end product of our habit systems." We have already pointed out that similar habits may arise out of very different kinds of motives and similar motives may lie behind different outward behaviors. One man may drink to escape major personal problems, another because if he did not drink he would be conspicuous among his drinking friends. The simple description of habits or stimulus-response connections does not yield a complete understanding of the behavior.

There are no longer any influential psychologists who take the extreme behavioristic viewpoint toward the study of personality. While it is possible to identify some writers on personality as behavioristic in orientation, the modern-day behaviorism is a far cry from the days of Watson. We find that in some ways it is possible to place personality theorists on a kind of continuum in terms of their readiness to make use of hypothetical constructs. All the theories use them to some extent. Even the most extreme users of constructs like Lewin, as we shall see shortly, argue that all the necessary constructs can be derived from objective observation of stimuli and responses. The most ardent behaviorist nowadays recognizes the need to make inferences about unseen processes like motives, habit family hierarchies, central excitatory state, and so forth. Many of the distinctions that used to be made between the mechanistic or behavioristic psychologist and the dynamic psychologist are rapidly fading. It is entirely possible for the behavioristically oriented personality theorist to work alongside the dynamic psychologist. Such reconciliations are being found more and more frequently. The recent book by Dollard and Miller (1950) is evidence that, in reality, the two types of views are really not so very far apart.

To give the reader the feeling of the contrasts which have been drawn between the behaviorist and the nonbehaviorist, we shall present some of the writings of H. A Murray (1938, pp. 6–9) who most impressively argues the view of the dynamic psychologist.

A little order is brought out of this confusion though somewhat arbitrarily by dividing psychologists into two large classes holding opposite conceptual positions. One group may be called *peripheralists,* the other *centralists.* The peripheralists have an objectivistic inclination, that is, they are attracted to clearly observable things and qualities—simple deliverances of sense organs—and they usually wish to confine the data of personology to these. They stand upon the acknowledged fact that, as compared to other functions, the perceptions—particularly the visual perceptions—of different individuals are relatively similar, and hence agreement on this basis is attainable. Agreement, it is pointed out, is common among trained observers when interpretations are excluded, and since without agreement there is no science, they believe that if they stick to measurable facts they are more likely to make unquestionable contributions. Thus, for them the data are: environmental objects and physically responding organisms: bodily movements, verbal successions, physiological changes. That they confine themselves to such events distinguishes them from members of the other class, but what characterizes them particularly is their insistence upon limiting their concepts to symbols which stand directly for the facts observed. In this respect they are *positivists.* Now, since we are reasonably certain that all phenomena within the domain of personology are determined by excitations in the brain, the things which are objectively discernible—the outer environment, bodily changes, muscular movements and so forth—are peripheral to the personality proper and hence those who traffic only with the former may be called *peripheralists.* If the peripheralists ever do indulge in speculations about what goes on within the brain, they usually fall back upon the conceptual scheme which has been found efficient in dealing with simpler partial functions. They resort to *mechanistic* or physiological explanations. Men of this stamp who study people usually come out with a list of common action patterns or expressive movements, though occasionally they go further and include social traits and interests. Such a man is apt, at least implicitly, to agree with Watson that "personality is the sum total of the habitual responses." This is one variety of the doctrine of elementarism. To repeat, the man we are distinguishing is a *peripheralist* because he defines personality in terms of action *qua* action rather than in terms of some central process which the action manifests, and he is an *elementarist* because he regards personality as the sum total or product of interacting elements rather than a

unity which may, for convenience, be analyzed into parts. Furthermore, the implicit supposition of this class of scientists is that an external stimulus, or the perception of it, is the origination of everything psychological. For them, the organism is at the start an inert, passive, though receptive, aggregate, which only acts in response to outer stimulation. From the point of view of consciousness, as Locke would have it, mind is at first a sensorium innocent of imprints which, as time goes on, receives sensations from external objects and combines them variously, according to objective contiguities and similarities, to form ideas and ideologies. Those who hold this view are called *sensationists.*

In contrast to these varieties of scientists are a heterogeneous group, the *centralists.* The latter are especially attracted to subjective facts of emotional or purposive significance: feelings, desires, intentions. They are *centralists* because they are primarily concerned with the governing processes in the brain. And to these they think they are led directly by listening to the form and content of other people's speech. Their terminology is subjectively derived. For instance, to portray a personality they do not hesitate to use such terms as wishes, emotions and ideas. Though most of them make efforts to observe behavior accurately, interpretation usually merges with perception, and overt actions are immediately referred to psychic impulses. Since the latter are intangible, personologists must imagine them. Hence, men of this complexion are *conceptualists* rather than *positivists*; and further, in so far as they believe that personality is a complex unity, of which each function is merely a partially distinguished integral, they are *totalists,* naturally inclined to doctrines of immanence and emergence. Craving to know the inner nature of other persons as they know their own, they have often felt their wish was realized, not by making conscious inferences from items of observation but by an unanalyzable act of emphatic intuition. For this, perceptions, naturally, are necessary, but the observer is only dimly aware of the specific sensa which were configurated to suggest the underlying feeling or intention of the subject's momentary self. So hold the *intuitionists.* Finally, as opposed to the *sensationists* are the *dynamicists* who ascribe action to inner forces—drives, urges, needs, or instincts—some of which, inherited or suddenly emerging may be held accountable for the occurrence of motility without external stimulation. These inner energies of which the personality may be wholly unaware seem to influence perception, apperception and intellection. The more or less mechanical laws of the sensationists are only true, it is believed, when a passive, disinterested attitude is adopted by the subject. But under most conditions, attention and conceptualization are directed by wants and feelings.

The picture that Murray paints of the behaviorist or mechanist was more true of the dyed-in-the-wool old behaviorist than it is today. In emphasizing his own approach, Murray has tended to exaggerate and build up some straw men to knock down, although in many instances, his arguments were very well taken. It is characteristic of many of the proponents of views like Murray's to understate the contribution that can be and has been made to personality theory by the peripheralists. Moreover, we shall try to show later on that many of the differences that have been sketched by Murray are no longer so dramatic as he argued in 1938. There are no longer many *mask* personologists of any influence.

It is not possible to read much of the clinical or personality literature without coming across the word "dynamic." As in the quotation from Murray, it has often been used to characterize personality theories and theorists emphasizing motives, needs, or forces as a primary unit in the description of personality. As one can see from Murray's account, dynamic psychologists are not reluctant to use hypothetical constructs to a great degree. They are apt to give the study of the characteristics of responses and their development more scanty treatment than behavioristic psychologists. Dynamic theorists willingly evaluate situations (stimuli) phenomenally, that is, in terms of how they appear to the individual. Like the layman, they are at home with such questions as, "What does he want?", "What is he thinking?", "What does he think of his parents?", and "How does he see the problem?"

In contrast to this view, behaviorists have tended to emphasize habits of response and speak very little about motives. While motives have not been entirely ignored by them, the emphasis has been on physiological drives. The topic of motivation in general has been given insufficient treatment by classical psychology. This is perhaps best illustrated by the latest *Handbook of experimental psychology,* edited by S. S. Stevens (1951). This highly regarded volume devotes a very small percentage of its space to the topic of motivation. This lack is particularly glaring in view of the space given to other much less important topics.

We are now reasonably well prepared to discuss the main ways of looking at personality. Included in our list are the following points of view: stimulus-response theory (behaviorism), theories of traits, typologies, the theory of needs and press, phenomenology, field theory, and psychoanalysis.

While we do not wish to minimize real differences which exist between the points of view concerning the nature of personality and the units used to describe it, we hope that the similarities will be recognized. As we have maintained earlier, some of the differences between theories lie in the words used, the readiness to use constructs, the exact nature of the constructs, and the relative emphasis on responses, motives, and stimuli or situations. At the

end of this section we shall try to reconcile the frames of reference. It is clear that they all must deal with the same basic facts even though they go about it in different ways. Each of them has stimulated complementary discoveries and different kinds of measuring devices.

Stimulus-Response Theory. Behavioristic psychologists have frequently started out with an interest in problems of learning and have later extended their concepts to the area of personality. As a consequence of this, their fullest attention has been directed at the way in which responses occur and become established in the presence of particular stimuli. They have studied carefully the nature of responses and response patterns, how they become stamped in or established as habits, and what kinds of cues or stimuli are associated with the observed behavior. They are objectivists. Their basic or elementary unit of observation is the stimulus-response connection. Associative learning is considered to be the means by which individuals develop the particular behavior patterns that are identified as personality.

There are many different theoretical positions within this group which are concerned with the exact nature of the rules by which stimulus-response connections are established. Some of them make much more use of hypothetical constructs than others. It is unnecessary to review each variation separately in this chapter. There is sufficient communality among the associative-learning theories to talk about them as a single group. Although not all the writers on the topic of learning theory have attempted to build their system of learning into a personality theory, a number of attempts at this have been made. Some of these have been synthesized with the more dynamic theories. Dollard and Miller (1950) and Mowrer and Kluckhohn (1944) have attempted such a synthesis. Guthrie (1938), Hilgard and Marquis (1940), Skinner (1938), Miller and Dollard (1941), Hull (1937, 1939), and others have also applied associative learning to personality.

Associative Learning. The commonest viewpoint that is expressed by these writers is that, under specified conditions of drive or tension and in the presence of stimuli or cues of various kinds, organisms happen to make certain responses. Those behaviors or responses which succeed in reducing the tensions are stamped in, so to speak, or learned. Through this process of learning, habits of response develop to a particular stimulus or stimulus situation. By a process of generalization, many similar stimuli become capable of eliciting the same response, and many different responses may become attached to the same stimulus. These habits or response patterns become more and more complex. They are characteristic of any particular individual because of his unique experiences, genetic background, and biological characteristics. These individual genetic, biological, and experiential characteristics determine which drives will operate and set limits upon the kind of responses which are possible and the extent of the learning which can take place. For example, the kinds of responses which are potential in the rat

differ from those which can occur in man. In the same way, individual differences in structure between people and in the kinds of stimuli encountered play a role in the development of the stimulus-response bonds and account for the variability found in personality. Habit patterns may be similar in groups of people because they often have common cultural and social pressures and experience.

The stimulus-response theorist, therefore, uses as his basic unit in the description of personality learned associations which become generalized and more complex to include all the richness of human behavior. Habit patterns constitute the individual's personality. The emphasis of the approach lies in the learning of specific responses to particular situations and the generalization of these responses to patterns of behavior set off by particular classes of stimuli. Stimulus situations may be relatively simple, such as the sight of bacon in a frying pan in a context of hunger sensations, or progressively more complex, as in a social gathering in which a great variety of attitudes among the guests are intermingled and responded to. Responses also may be simple or complex. Moreover, the learning may proceed covertly without awareness of the stimulus-response connections or may include recognition as part of the response.

Role of Motivation. This emphasis on the stimulus-response side of behavior has led some dynamic theorists to label the stimulus-response theory a mask approach to personality. But few behaviorists today are so naïve concerning human motivation, despite their neglect of the subject, that they are willing to equate all superficially similar behavior. While their emphasis has been on modes of responding, and sometimes even muscular movements, the modern behaviorist usually recognizes that an important determinant of which response pattern is established is the drive or motive that excited the original activity. The modern behaviorists' system of thought includes the drive as well as the stimulus and the response, even though their emphasis still rests on the latter two elements, the stimulus and the response. Moreover, it is possible, as Dollard and Miller have done, to think of responses in a much broader sense than as simple motor behavior. Response patterns are obviously not all equivalent in importance. Response can be made comparable to the psychoanalyst's concept of mechanism.

Consistency of Behavior. Writers have sometimes been misled into believing that the proponents of the stimulus-response theory deny consistency of behavior. A good example of the confusion that has arisen along these lines on the part of writers sympathetic with the dynamic frame of reference is the statement of MacKinnon (1944, p. 25):

> According to this theory there are no broad, general traits of personality, no general and consistent forms of conduct which, if they existed, would make for consistency of behavior and stability of personality, but only

independent and specific stimulus-response bonds or habits. Proponents of this view argue that it is meaningless to speak of individuals as aggressive, extraverted, persistent, ascendant, etc., for such terms cannot properly be applied to persons but only to the quality of the behavior which they will reveal in specific situations.

In studying MacKinnon's discussions, it is difficult for us to see how a trait necessarily differs from the behaviorist's concept of a generalized habit except, perhaps, in that the latter assumes a characteristic is learned while the former concept implies nothing about its origin. Both a trait and a habit, or habit system, are dispositions to act in certain ways, given a particular stimulus situation. The stimulus, as we have pointed out, may be very complex and may be so generalized that the response tendency appears to be present in a large class of stimuli. It is therefore incorrect to state that generality is denied by the stimulus-response theorist. One of the major tenets of learning theory is that stimulus and response generalization occurs.

Let us examine some of the statements made by one of the most persuasive of the stimulus-response advocates. Guthrie (1944, p. 58) writes:

> For the purpose of this chapter personality is defined as those habits and habit systems of social importance that are stable and resistant to change.
>
> Many habits are recognized as transient in the sense that they may be expected to change readily with common changes in environment. We change our residence and find no difficulty in breaking the habit of going to the previous apartment. The season changes and we alter our clothing to suit.
>
> There are other habits and habit systems we regard as more profound. A housewife has fought disorder for so long that we judge that the sight of it will continue indefinitely to make her uncomfortable until it is corrected. A certain man has been so habituated to lavish spending that we judge the reduction of his income will not effect a tendency to economize. After the depression many firms found that men habituated to executive positions at large salaries were now not employable in subordinate places at less salary. Their role and habits of command were so well entrenched that these were characteristic and would outlive a change of circumstances.
>
> Systems of deep-laid habits that make up the personality may be formed about a wide variety of circumstances. Since habits are always adjustments to change, so is personality to be regarded as founded on learned adjustment.

It is clear, therefore, that the S-R theorist finds both specificity in responses and response patterns as well as generality and consistency because the same response has often been learned to a great variety of stimulus situ-

ations. Moreover, he argues that, in response to drive states and motives, stimulus-response connections are the most adequate units for personality description. He believes that we must study the formation of these connections through principles of learning. In fact, by virtue of using any constructs at all, like drive or habit strength, his formulation really becomes S-O-R, stimulus-organism-response. He has postulated that intervening between the stimulus and the response is an organism which has certain hypothesized characteristics. Most stimulus-response theories today imply more than merely a mechanistic connection between the stimulus and the response. They tend to be more or less S-O-R theories.

Trait Concepts. On the same level as habit is another descriptive unit of personality which has been stressed by many psychologists. This unit is called the *trait*. The earliest trait concepts were genuinely mask approaches to personality because they were used to describe surface characteristics of the individual. Such a frame of reference fits very easily into our everyday conversation. We say a man is honest, or immature, or energetic, or sentimental. In a study of trait names in the English language, Allport and Odbert (1936) found 17,953 terms which were used to describe characteristics of people.

What is always involved in description by traits is that under a given number of circumstances a person is observed to behave in this or that manner. Whatever the reasons for the behavior (which we may speculate on if we choose) we simply observe his responses or response patterns. We are so prone to characterize people that it may take only one event in which a man behaves honestly to make us say, "This fellow is an honest man." We have assumed from this one situation that this honest behavior is really a characteristic of the person in all situations. We say he has the trait of honesty.

The simple listing of an individual's behavior in certain limited situations is not sufficient to characterize him. As we have pointed out, the same behavior patterns may arise for very different reasons. The patterns may be related very differently to other important personality characteristics. Moreover, some of these traits may be narrow (found in only limited situations) and others broad (general for the person). Our description is always limited by a relatively small sample of situations and observations.

A substance approach to the treatment of traits has been stressed by Gordon Allport (1937). He has urged a search for the determiners of behavior and has distinguished two basic kinds of traits—the genotypical and phenotypical (terms borrowed from Lewin). He writes (pp. 324–325):

> It is obvious that what seems to be the *same* trait may, in different people, have quite diverse origins. Shyness in one person, for example, may be due to hereditary influences that no amount of contrary pressure from the environment has been able to offset; in another person shyness

may stem from an inferiority feeling built by an abnormally exacting environment. In spite of dissimilar histories, in appearance and in effect, the shyness of these two persons may be very much alike. Conversely, two youths suffering from some shocking experience or grief or bitter disappointment, objectively alike, may be affected very differently. One of them becomes morose and ineffectual, lost in his trouble; the other stiffens his back and becomes more realistic and aggressive. The same fire that melts the butter, hardens the egg.

Lewin has shown this general problem of appearance vs. underlying cause to be of considerable importance in the investigation of personality. Description in terms of here-and-now attributes are *phenotypical*; explanatory accounts, seeking underlying motives and stresses, are *genotypical*.

For Allport, some traits are more important than others. The genotypical traits are more inclusive and relatively independent of specific situations. The phenotypical traits are less consistent and more limited in scope. They are much more numerous and are the mask features of personality. By observing the specificity and generality of behavior patterns through clinical observation, we can identify the relatively stable dispositions to action which make up the personality organization we are seeking to understand.

Other psychologists have recognized the importance of differentiating between traits which are reasonably stable and those which are situational. In a recent book, Cattell (1950) has given an elaborate presentation of a trait approach to personality.

In Cattell's system there are several ways of classifying traits. The smallest behavior fragments or narrow traits are called *trait elements*. These include an enormous number of characteristics. As Cattell himself points out, ". . . the dictionary gives a trait of 'manual dexterity'; but this could be split into 'dexterity in shuffling cards,' 'dexterity with a screwdriver,' and so on."

Taking account of the greater generality of some traits, Cattell introduces the category of *surface traits*. These are like Allport's phenotypical traits. They may be very broad or narrow, according to their dependence upon specific situations, but they are always more general than trait elements. In Cattell's words, "A surface trait is in any case simply a collection of trait-elements, of greater or lesser width of representation, which obviously 'go together' in many different individuals and circumstances."

In Cattell's system, surface traits and trait elements are really mask aspects of personality description. Recognition is given to the determining nature of certain individual characteristics by means of the category *source traits*. Again we may refer to Cattell (p. 22):

> Actually the essential meaning, at least, of *source trait* can be made clear to common sense, without statistical technicalities. It is only in

> grasping the methods of discovering and delimiting source traits that factor analysis is necessary. Consider, for example, one of the surface traits or types already mentioned—that revealed by the three positive correlations that exist among the three measures: (a) size of vocabulary, (b) arithmetical ability, (c) tactfulness in social situations. If we ask how this surface trait might have come into existence, attention turns first to the influence of innate mental capacity. Other things being equal the individual of greater general mental capacity will achieve a greater size of vocabulary, will handle arithmetical problems more capably, and will also be more clever and tactful in social situations Some of the observed positive correlations among the three variables in the surface trait will therefore have their *source* in the fact that the performances all spring in part from a single root, namely, general mental capacity. But it also happens that these three performances are about equally the objects of educational attention, so that the individual who has longer or better schooling will tend to do better at all three of them. Consequently another part (perhaps the remaining part) of the positive intercorrelation seen in the surface trait goes back to this second source-length of education. *General mental capacity and amount of education* experienced may therefore be considered two *source traits* accounting for the observed *surface trait.*

It is clear, then, that Cattell's source traits are really the determiners of the surface behavior of the individual and represent the stable and consistent aspects of personality. In this sense they are somewhat analogous (but not equivalent) to Allport's genotypical traits.

A word should be said about some other ways in which Cattell classifies traits. In addition to being concerned with the inclusiveness of a trait, Cattell is also interested in whether certain traits are possessed by large groups of people or by a particular individual as a unique characteristic of that person. *Common traits* are possessed by all or large groups of people, depending upon common hereditary possibilities and similar cultural patterns. A *unique trait,* however, is peculiar to an individual. No other person possesses that particular pattern. In addition to these formal ways of classifying traits, Cattell has found it convenient to identify traits in accordance with three rough modes. We may speak of *ability traits, temperament traits,* and *dynamic traits.* Ability traits are defined as, "how well the person makes his way to the accepted goals." Dynamic traits or interests include basic drives (called "ergs") and acquired interests such as attitudes, sentiments, complexes, superego and ego formations (called "metanergs"). Temperament traits represent the remainder of characteristics which are not influenced by task complexity or incentives. They appear to be largely constitutional. including high-strungness, speed, energy, and emotional reactivity.

Cattell's method of identifying and classifying traits is entirely statistical and logical. In a recent book he has outlined his factor-analysis approach to psychological problems (1951). It is this methodological feature which characterizes Cattell's contribution to trait psychology. Except for Cattell's statistical elaboration of the method of identifying traits, his and Allport's approaches are basically the same.

Cattell's system makes use of correlational techniques for relating the behavior of different people in a variety of test situations. In this way it is possible to study interindividual relationships in different test situations, intraindividual relationships on the same test situation, and intertest relationships on the same individuals. By means of factor analysis of these kinds of intercorrelations, various traits may be isolated. One of the goals of this factorial approach is to eventually establish the minimum number of *factors* which will account for all the variability in personality.

As we have indicated in our discussion of the use of factor analysis as applied to intelligence, the major limitation of this technique is the fact that what is derived is entirely dependent upon the kinds of responses one includes in his sample of test situations. It is perfectly possible that the situations which are selected do not include important, and perhaps crucial, variables. For example, if the tendency to repress is a significant trait variable, then to establish the existence and importance of such a tendency by factorial techniques requires the use of situations and measuring devices which allow this process to occur. Moreover, problems arise concerning the way one interprets the interrelationships which are found and the manner in which the traits which emerge are identified. Whatever may be the future of this kind of approach to personality description, few people would deny the value of determining the "going togetherness" or interrelationships of the behavior patterns which make up personality.

It should be clear that trait concepts may be mask or substance in nature. The trait may refer to the response side of the event or may deal with the inferred aspects of behavior. While a trait theory may emphasize either approach, modern ones make use of a great many hypothetical constructs. In this sense, Allport and Cattell are separated from the extreme behavioristic end of the continuum. But as in the case of the stimulus-response theorist, the starting point for their inferences is behavior itself. By intuitive and statistical means, the constructs are derived in order to make the behavior more meaningful or lawful.

Type Concepts. While any trait represents a particular classification of human behavior, a type is also such a classification. However, type includes a much broader sample of behavior. When we say that Tom is seclusive, quiet, socially uncomfortable, and so on, we are describing him in terms of traits. However, we may note that people who are seclusive are also usually quiet and socially uncomfortable. These characteristics seem to go together.

We may call people who have all these general characteristics introverts. In this case we are identifying Tom as belonging to a class of people which we may call a type. Being an introvert means having most of these characteristics, or traits, or habit systems if you like.

Typologies, then, are broad categories which include a large variety of behavior samples which go together. They may be dichotomous typologies, such as in Jung's (1923) extroversion-introversion classification. They may be trichotomous, as in Sheldon's physiological groups—endomorphy, ectomorphy, and mesomorphy (1940, 1942, 1944). They may even be multiple in nature as in the case of Spranger's (1928) six types of men. If the typology is very narrow, it resembles a trait. Conversely, some traits are actually so broad that they may be treated as types.

Allport (1937) has argued that a trait and a type must be distinguished from each other. He writes (pp. 295–296):

> Again we refer to the sharp contrast between the theory of traits and the doctrine (any doctrine) of types. Unlike traits, types always have biosocial reference. A man can be said to *have* a trait; but he cannot be said to *have* a type. Rather he *fits* a type. This bit of usage betrays the important fact that types exist not in people or in nature, but rather in the eye of the observer. Type includes more than is in the individual. Traits, on the contrary, are considered wholly within the compass of the individual. The crux of the distinction is that in type the reference point is always some attribute, or cluster of correlating attributes abstracted from various personalities, a biosocial reference defined by the interest of the particular investigator.

This appears to us to be a rather odd distinction at best. We cannot see how anyone can identify a characteristic that is inside the individual without it being observed by someone, even if it is only inferred indirectly from behavior. Allport's distinction appears meaningless to us. The individual is seclusive, etc. (traits), and hence he is introverted (type). A type is simply a very broad trait including a large variety of specific behavior patterns within its scope. Like a trait it may reflect either a mask or substance frame of reference. *The value of the concept of type for psychologists depends upon how completely the individual behavior patterns are described by it and how well it allows us to predict behavior in future situations.*

Type concepts have been one of the favorite ways of describing personality since philosophers and psychologists have been observing behavior. The attractiveness of the typology has been its simplicity. If all behavior could be described in terms of two or three main classes of tendencies, our task of description would be greatly simplified. The basic inadequacy of typologies has been that all varieties of behavior cannot be included in broad type categories. Psychologists have sometimes attempted to cram all behavior

into very few classes. Because of this, individuals within a type may differ as much or more than those classified under different types.

Typologies have tended to develop from casual armchair observations. In order to classify behavior into large classes or types, it is necessary to make observations of a very large number of behavior samples and determine statistically which samples go together. The clinician has always been trying to do something like this. His methods, however, have tended to be rough and unsystematic. What Cattell and the other factor analysts are attempting to do statistically is what the clinical psychologist, medical practitioner, and philosopher have been doing by rough observational tools for a long time. The results of previous efforts have been inadequate because of attempts to force behavior into large types at the expense of doing justice to its tremendous variability. Observations have also been made on samples which are too limited for appropriate classification.

There have been, and still are, so many typologies in psychology that it is unwise to attempt to review them here. They include not only the attempts at classification by the ancient philosophers but also the concepts of present-day personality theorists. Some of the typologies are primarily psychological and others, constitutional in nature.

Perhaps one of the best known psvchological typologies is the extroversion-introversion dichotomy of Jung (1923). The introvert is described as an individual who finds the greatest satisfactions through more solitary, introspective kinds of activities. The extrovert, on the other hand, seeks social stimulation. Jung identified subclasses of the extrovert-introvert dichotomy. The extroversion-introversion classes were described in terms of the thinking, feeling, sensing, and intuiting aspects of psychological behavior. People were believed to fall on a continuum from both extremes—from extroversion to introversion. The question of whether the typology was actually dichotomous (bimodal in nature) or continuous has also given typologists some concern.

In examining the literature on typologies it is possible to distinguish many other psychological dichotomies which are similar to Jung's extroversion-introversion classification. The shallow-broad versus deep-narrow types of Gross (1902) have been cited by many as suggesting a basically similar kind of classification. The extratensive-introversive dichotomy of Rorschach (1942) represents a similar division. Even the constitutional types of Kretschmer (1926), which include the pyknic and asthenic at opposite extremes, seem to have some of the characteristics of the extrovert-introvert classes on the temperamental level. The temperament types which correspond, in Kretschmer's system, are the cyclothyme (extrovert) and schizothyme (introvert).

It would be possible to expand considerably the kind of analysis we have been pursuing. For the purposes of this chapter, however, it should be sufficient to point out that many of the psychological dichotomies may be related

in terms of the characteristics included under them. MacKinnon (1944) has discussed this point and has produced an excellent table (Table 6) which includes the most important dichotomous typologies.

TABLE 6. TABLE OF TWOFOLD TYPOLOGIES *

PSYCHOTIC TYPES	
Manic-depression	Dementia praecox (Kraepelin)
Manic-depression	Schizophrenia (Bleuler)
PSYCHONEUROTIC TYPES	
Hysteria	Psychasthenia (Janet)
PSYCHOTIC PERSONALITY TYPES	
Cycloid	Schizoid (Kretschmer)
PSYCHONEUROTIC PERSONALITY TYPES	
Hysteroid	Obsessoid (Janet)
NORMAL PERSONALITY TYPES	
Shallow-Broad	Deep-Narrow (Gross)
Extraverted	Introverted (Jung)
Nonperseverative	Perseverative (Spearman)
Objective	Subjective (Stern)
Cyclothymic	Schizothymic (Kretschmer)
Syntropic	Idiotropic (Wertheimer & Hesketh)
Color-type	Form-type (Scholl)
Extratensive	Introversive (Rorschach)
B-type	T-type (Jaensch)
Integrate	Disintegrate (Jaensch)
PERSONALITY TRAITS	
Suggestibility	Nonsuggestibility (Janet)
Hypnotizability	Nonhypnotizability (Janet)
Short secondary function	Long secondary function (Gross)
Extraversion	Introversion (Jung)
Nonperseveration	Perseveration (Spearman)
Color-abstraction	Form-abstraction (Külpe)
B-type eidetic imagery	T-type eidetic imagery (Jaensch)
Integration of psychic processes	Disintegration of psychic processes (Jaensch)
MORPHOLOGICAL TYPES	
Pyknic	Leptosomic (Kretschmer)
$\frac{\text{Height}}{\text{Chest volume}}$ low	$\frac{\text{Height}}{\text{Chest volume}}$ high (Wertheimer and Hesketh)

* From MacKinnon, D. W The structure of personality In J. McV. Hunt (Ed.), *Personality and the behavior disorders*. New York: The Ronald Press Company, 1944. Vol. I, p. 18 By permission of the publishers.

In addition to the sample of typologies we have already mentioned, there are a number of classifications which are particularly common to the fields of abnormal and clinical psychology. These typologies have the same characteristics as the types we discussed earlier except that they apply to the class of observations we identify as clinical. Among these may be included such dichotomies as amentia-dementia, organic-functional, manic-depressive psychosis–dementia praecox (Kraepelin, 1899), and hysteria-psychasthenia (Janet, 1894, 1903). These types or broad syndromes are very frequently contrasted in modern clinical psychology. They reflect the belief that all mental deficiencies may be classified meaningfully into amentias and dementias, all psychoses may be divided into organic and functional types, and so on. The usefulness of these classifications, as we have said before, depends upon whether the categories will lead us to predict effectively some kinds of behavior. We are still laboring under the old Kraepelinian psychiatric classification. This is a type classification the usefulness of which has become more and more doubtful in clinical psychology and psychiatry. There is an increasing recognition of the need to look for the individual motives and mechanisms underlying the formation of clinical syndromes and types of disorders.

Symptom, Syndrome, and Mechanism. The kinds of units we have been discussing such as stimulus-response elements, habits and habit systems, and traits and types may be found in abnormal and clinical psychology but with somewhat different terminology. Students are often fooled by words such as symptom and syndrome. Like habits and habit systems and traits and types, these terms are applied to the special kinds of observations in abnormal and clinical psychology. Symptoms are smaller units of response to stimulus situations than are syndromes. Symptoms and syndromes are really phenotypical traits and types. They are forms of mask descriptions. In Cattell's terms they would be surface traits or trait elements. For Guthrie they might be thought of as responses and habits, respectively. Their special connotation in abnormal psychology is that they are usually undesirable in the sense that they refer to some forms of maladjustment. In short, they are broad or narrow units or classes of behavior description. Symptoms include such responses as headaches, fever, delusions, anxiety, etc. Syndromes are collections of symptoms which go together. For example, the syndrome hysteria consists of collections of symptoms like paralyses or physical ailments as well as tendencies to block, to avoid emotional threats, and to be socially naïve. Broad syndromes could be called types. For example, a patient with the syndrome hysteria might be called a hysterical type.

The word mechanism is also found so often in the clinical literature that we should say a little about it. It should be clear that defense mechanism is analogous to habit system and trait. In its clinical usage it often has the connotation of a source trait or genotypical trait. Symptoms are often looked upon as the result of certain learned mechanisms. For example, the psycho-

analysts speak of repression as the primary mechanism of patients with a hysterical syndrome.

Actually, a defense mechanism is a process which can be inferred only from symptoms and surface behavior. We say, "The mechanism Bob is using to protect himself from accepting the blame for his school failure is rationalization. He believes his teachers are inadequate." We infer this process of rationalization from our observation of Bob's behavior. We recognize that his judgment has been incorrect, and our comparison of his behavior in this situation with the behavior of others in similar ones leads us to identify the common mechanism of rationalization. We are suggesting he is motivated not to accept the blame for his failure. Our use of the term rationalization suggests an attempted explanation of the superficial behavior we are observing. Defense mechanism is therefore a source trait or genotypical trait. It is a process which, inferred in a variety of different situations which had in common some threat to Bob's self-esteem, could be called a generalized habit in response to certain social motives.

Theory of Needs and Press. In 1938, Henry A. Murray published an important book called *Explorations in personality.* The major part of the writing consisted of the background, procedures, and findings of a series of intensive case studies by a group of psychologists working at the Harvard Psychological Clinic. Of great importance was a short section called "Proposals for a theory of personality." This theoretical discussion represented, according to Murray, the composite thinking of this group of psychologists of diversified backgrounds and points of view. It was an attempt to develop a dynamic conceptual scheme for the description and study of personality. It is this theoretical summary that concerns us here.

We have cited an earlier quotation of Murray's which roundly criticizes the behavioristic approach to personality. In his own system, Murray freely makes use of hypothetical constructs in explaining human behavior. These imaginary entities which direct and control the nature of the individual are thought to be represented in the brain. Murray is actually less interested in the movements or actions (responses) of the individual than he is in the forces behind them. His is basically a motivational theory of personality. He has borrowed heavily from earlier dynamic theorists like McDougall, Freud, and Jung. Needs (motives) and press (stimulus situations) are the cornerstones of Murray's theory. Let us examine a little more carefully what Murray has to say about needs and then briefly discuss some of his other concepts.

Needs. Murray writes that "a need is a hypothetical process the occurrence of which is imagined in order to account for certain objective and subjective facts." Its characteristics must be inferred from objective behavioral data. It is very much like the concept of drive or motive. Murray (1938, p. 124) defines a need as a construct,

> . . . which stands for a force (the physico-chemical nature of which is unknown) in the brain region, a force which organizes perception, apperception, intellection, conation and action in such a way as to transform in a certain direction an existing, unsatisfying situation. A need is sometimes provoked directly by internal processes of a certain kind (viscerogenic, endocrinogenic, thalamicogenic) arising in the course of vital sequences, but, more frequently (when in a state of readiness) by the occurrence of one of a few commonly effective press (or by anticipatory images of such press). Thus, it manifests itself by leading the organism to search for or to avoid encountering or, when encountered, to attend and respond to certain kinds of press. . . .

Needs, therefore, are the directing forces behind behavior.

Needs may be classified in a number of ways. They may be divided into primary (viscerogenic) and secondary (psychogenic) types. Murray lists 13 primary needs and 28 secondary ones. Some examples of the former are need for air, water, sex, urination, and harm avoidance. Some of the psychogenic needs are acquisition, achievement, dominance, blame avoidance, and succorance.

These needs are organized within any individual in various ways. Within any person some needs or groups of needs may be dominant or become dominant with changes in the stimulus situations. They may also be in conflict so that considerable personal misery may result. Needs may become attached to objects like people and things. If an object evokes a positive or adient need (indicating that the person likes the object), it is said to have a positive cathexis or value. If it evokes a negative or abient need (indicating that the individual dislikes or is threatened by it), the object has a negative cathexis. The term "cathexis" is one which is borrowed directly from Freud

Usually certain kinds of objects commonly and regularly evoke groups or clusters of needs. In addition, needs themselves become attached consistently to classes of objects. Habits of action may grow out of these connections. These connections become stable organizations in the brain, accounting for the consistencies we note in people and in our own introspections. Images of these objects in familiar settings and of preferred modes of behavior become integrated in our minds with the needs and emotions which they usually excite. They may enter consciousness as fantasies or plans of action which may be realized in behavior patterns. These hypothetical organizations are called by Murray "need integrates."

Need integrates may be manifest or latent. Manifest needs are those which take the form of real action. Latent, covert, or imaginal (as Murray refers to them) needs are not observed in the form of action but remain at the fantasy level. Moreover, needs may be either conscious or unconscious. In the former case, they are reportable by the individual.

Press. A very important role is given to the environment in Murray's personality theory. The environment or stimulus situation is phenomenal in nature, that is, it is based on the personal frame of reference of the individual. The stimulus situation is identified in terms of the kind of effect it is exerting or will exert upon the person. It may be facilitating or obstructing to important needs. This tendency of the stimulus situation to be reacted to as harmful or beneficial to the individual is called a "press." Press is therefore always identified in terms of the need systems of the individual. Hostility has no press for an individual who has no needs related to hostility. The way the stimulus is perceived determines its pressive nature for the person. Murray writes, "Thus, one may ask: does the object physically harm the subject, nourish him, excite him, exalt him, depreciate him, restrain, guide, aid or inform him?"

Thema. The needs-press aspect of any event represents its dynamic structure which is called by Murray a "thema." A simple thema is the combination of a particular press and a particular need. The thema or need-press combination is the unit of personality which Murray believes can be most adequately handled by the personologist.

The kind of personality description which Murray has urged is one which emphasizes combinations of needs and environmental press. These combinations are called "themas." The focus of the system is the need which may be classified as viscerogenic or psychogenic, latent or manifest, and unconscious or conscious. The theory says very little about the ways these needs are developed and tends to deemphasize (in contrast to the stimulus-response approach) the ways in which needs are satisfied (by movements or responses which are called "actones"). It is the effect, not the response, which is important. The actual behavior patterns are significant only in so far as they can lead the psychologist to make the correct inferences concerning the individual's organization of needs and the press to which he is responding. The usefulness of the system depends upon the potential adequacy of the principles from which such inferences are made.

Objective psychologists have been reluctant to approach personality in Murray's fashion because of the difficulties and confusions which may easily result from the dependence upon subjective evaluation and inferential reasoning. While Murray's scheme is not so systematic or fully worked out as it might be, many clinical psychologists and personologists have found it helpful and have been striving to find the rules for translating behavior into understandable themas. However, the Murray formulation has not had such a wide influence on clinical practice as the Freudian theories from which it was primarily derived. The contribution of Freud to systematic thinking about personality greatly overshadows Murray's needs-press formulation.

Psychoanalytic Theory. Probably no movement in psychology has influenced the practices and points of view of clinical psychologists more than

psychoanalysis. To realize the extent of this influence, one has only to look into almost any systematic statement concerning the nature and development of personality to find abundant references to the psychoanalytic point of view. Whether one finds agreement with the Freudian doctrines or not, Freud's unmistakable stamp is continually found. While it originally grew out of observations about neuroses, psychoanalytic theory has been applied to all forms of behavior on the assumption that the same concepts can explain both normal and pathological events.

There is no single psychoanalytic theory any more than there is uniform agreement among the stimulus-response theories of personality. Freud himself changed many of his views in the course of his long career of writing and observing. There are important differences between groups of current psychoanalytic writers. In order to fully describe the psychoanalytic concepts of personality, we would not only have to consider in detail those various systems of thought within the orthodox psychoanalytic frame of reference, but also look into the concepts of such offshoots of psychoanalysis as the theories of Jung, Adler, Rank, and others. Fortunately there is enough communality among most of the psychoanalytically oriented positions to lump them all together for the purpose of this brief exposition. Since the work of Freud and his interpreters is the basis of them all, it will serve the purpose to consider the main elements of his system of thought.

The writings of Freud and the other psychoanalysts are so extensive that it is difficult to list for the student all the possible sources for reference and supplementary reading. The problem is further complicated by the fact that psychoanalysis is not only a theory of personality but a form of psychotherapy and a technique of observation as well. Consequently, much of the writings contain mixtures of these interests. One of the best current systematic presentations of psychoanalysis may be found in Fenichel (1934, 1945) along with an extensive bibliography. The student of clinical psychology and personality theory should consult some such systematic treatise.

Mental Dynamics. Like all dynamic theories, the psychoanalytic system revolves around forces or drives. It is basically a motivational theory. Mental phenomena are looked upon as the result of interacting forces which are understood from a historical point of view. In other words, it looks at current events as products of past development.

The expression used by Freud to signify the energies or forces which stimulate human activity was the German word *Trieb*. This term has been translated into the English expression *instinct*. This translation has produced serious misunderstanding *Trieb*, as Freud used it, does not have the implication of unchangeability of pattern that has been identified with the word instinct. Under environmental influences certain *Triebe* may be altered with regard to their aims and objects.

Freud postulated two basic kinds of human drives or instincts. Both are

biological in nature. The former variety consists of simple physical needs like hunger, thirst, defecation, urination, and breathing. These drives are sparked by somatic changes within the organism. The satisfaction of these basic urges is vital, and their aims cannot be altered. There is therefore little variability in these needs, and they are relatively unimportant for psychology.

The second group of urges were identified as a result of Freud's experiences with psychoneurotic patients. This class of urges was divided into two basic kinds: the life urge (eros) and the death urge (thanatos). The former are the sexual drives and were often called the "libido." Actually, the use of the term "sexual" has resulted in considerable confusion. Freud's concept of sexuality is a much broader one than we customarily use in everyday speech. It includes, in addition to the normal adult sex urges, gratification through stimulation of the erogenous zones (mouth, anus, genitals, etc.) of the body. In infants this is called "infantile sexuality." The excitations which originate sexual behavior are completely physiological in nature. However, the forms of behavior which produce gratification of this sexual urge are very many. Freud believed that many kinds of behaviors which had never before been identified as sexual were in reality forms of satisfaction of the sexual urge.

As a consequence of the clinical observation that many forms of behavior appear to be self-destructive in nature, Freud postulated the existence of the other kind of urge—the death instinct. While the life urges provide the energy for constructive, life-maintaining activities, the death urges are aimed at self-destruction and may be observed as hatred and homicidal or suicidal behavior. The death instinct has been widely criticized by psychologists and has tended to be dropped even by more orthodox psychoanalysts. Fenichel (1945) suggests that the aggressive tendencies in human behavior can be subsumed under the sexual urges as derivatives of them. According to Fenichel, therefore, the only instinctual forces which are the important sources of activity to be studied by psychologists are the sexual urges. Aside from the simple physical needs, sexuality is the basic human drive.

The Pleasure and Reality Principles. The pleasure principle (or *Nirvana principle*) was originally conceived by Freud to account for the effects of the instincts on behavior. It has much in common with the biological concept of homeostasis. Instincts are thought to maintain a constant level of tension in the organism. In other words, there is a basic tendency to abolish tensions which have been aroused by stimulation and to return to the previous energy state. Tensions which arise as a result of stimulation are experienced consciously as feelings of unpleasantness or desire. All psychological processes are believed to arise in such an unpleasant state of tension and lead to some kind of behavior which will reduce or remove it.

Sexual instincts and physical needs are the sources of the stimulation or tension which the organism seeks to abolish or avoid. The *aim* of an instinct is some form of behavior which reduces or removes the physical condition of

excitement and consequently brings about a state of satisfaction. The object of an instinct is therefore the instrument which results in this satisfaction. Instincts have their *source* in the chemicophysical characteristic of the organism which causes some stimulation to result in the excitement which is experienced as an unpleasant tension.

The course of mental processes is, in the Freudian system, automatically regulated by this pleasure principle, which in the simplest sense means the avoidance of pain (excitement) and the production of pleasure (tension reduction). The psychoanalysts maintain that sexual forepleasure (petting, kissing, etc.) is only superficially an exception to this rule, since the pleasurable excitement of sexual foreplay rapidly becomes distressing if no discharge of the tension is anticipated.

Freud originally gave the greatest importance to the pleasure principle. Later he recognized that adult behavior could not be considered to be governed exclusively by it even if a death instinct were postulated. He pointed out that behavior is often observed which is at the moment considerably unpleasant but has salutory consequences in the future. The student who studies with the greatest effort cannot be considered to be acting in accordance with the pleasure principle unless it can be assumed that this activity is providing the greatest pleasure at the moment or producing the least immediate tension. Actually the student is accepting a certain amount of frustration now in order to gain a desirable objective at some future time.

The operation of the reality principle develops later in the life of the individual. While infant behavior is characterized by the dominance of the pleasure principle, the reality principle should be substituted later as a result of experience with the world. A great many occasions arise when the pleasure principle may be in conflict with the forces for life preservation. Immediate pleasure or pain avoidance must be dispensed with in order to gain greater pleasure or avoidance of pain on future occasions. Some mental disorders (*e.g.*, the psychopathic personality, etc.) are characterized by a failure of the reality principle to develop normally.

Mental Economics. The mental organization has been postulated by Freud to contain a constant or fixed amount of energy. Energy which is being expended in one kind of behavior cannot be available for other activities at the same time. Fenichel (1945, p. 13) clearly describes this concept:

> When a person suppresses an irritation and subsequently in another situation reacts violently to an insignificant provocation, it must be assumed that the first quantity of irritation, which was suppressed, was still at work in him as a readiness to discharge, later seizing the first possible opportunity. The energy of the forces behind the mental phenomena is displaceable. Strong impulses demanding discharge are more difficult to restrain than weak ones; however, they can be restrained if the counter-

forces are equally strong. What quantity of excitation can be borne without discharge is an economic problem. There is a "mental energy exchange," an economic distribution of the energy at hand between intake, consumption and output. Another example of the usefulness of the economic concept is seen in the fact that neuroses frequently break out at puberty and at the climacterium. The person affected was able to withstand a certain amount of undischarged instinctual excitation; however, when physical changes increased the absolute quantity of this excitation, the countermeasures no longer sufficed. Countless other examples exist which bring home the importance of the economic point of view for the understanding of factually observed phenomena. The person who was tired after having done nothing represents but a special type of general inhibition due to silent internal tasks. Those who have inner problems to solve must apply a great deal of their energy to them, and there remains little for other functions.

Mental Structure. An excellent statement of the psychoanalytic way of looking at the psychological organization has been provided by Fenichel (1945, p. 15).

> Mental phenomena are to be regarded as the result of the interplay of forces pressing respectively toward and away from motility. The organism is in contact with the outside world at the beginning and at the end of its reaction processes, which start with the perception of stimuli and end with motor or glandular discharge. Freud looks at the mental apparatus as modeled after an organism floating in water. Its surface takes up stimuli, conducts them to the interior, whence reactive impulses surge to the surface. The surface is differentiated gradually with respect to its functions of stimulus perceptions and discharge. The product of this differentiation becomes the "ego." The ego proceeds selectively in its reception of perceptions as well as in its allowing impulses to gain motility. It operates as an inhibiting apparatus which controls, by this inhibiting function, the position of the organism in the outside world. . . .
>
> The ego develops abilities with which it can observe, select and organize stimuli and impulses: the functions of judgment and intelligence. It also develops methods of keeping the rejected impulses from motility by the use of energy quantities kept ready for this purpose; that is, it blocks the tendency toward discharge and changes the primary process into the secondary process. . . .
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> Underneath the organized periphery of the ego lies the core of a dynamic driving chaos of forces, which strive for discharge and nothing else, but which constantly receive new stimulations from external as well as internal perceptions, influenced by somatic factors that determine

how the perceptions are experienced. The organization proceeds from the surface to the depth. The ego is to the id as the ectoderm is to the endoderm. The ego becomes the mediator between the organism and the outer world. As such it has to provide protection against hostile influences from the environment as well as enforcement of gratification even against a restricting outside world. . . .

. . . The energy with which the ego carries out its instinct-inhibiting activities is drawn from the instinctual reservoir of the id. A portion of the instinctual energy is changed into counterinstinctual energy. A certain part of the ego which inhibits instinctual activity develops on the one hand closer to the instincts and on the other hand is in conflict with other parts of the ego that are hungry for pleasure. This part, which has the function (among others) of deciding which impulses are acceptable and which are not, is called the superego. While the ego is also a representative of the outside world, here again we have a special representative of the outside world within the first representative.

We shall reconsider the psychoanalytic version of the mental organization in our own words. In order to explain and systematize behavior, Freud postulated the existence of two basic entities which make up the organization of the personality. One of these, the ego, had a subentity, the superego. As we have pointed out before, in postulating these entities, Freud was making free use of hypothetical constructs which could not be observed but had to be inferred from the behavior of the individual. Lack of integration, or conflict between these imaginary divisions, lies at the root of behavior disorders and psychological misery.

In the Freudian system the id is the source of all instinctual energy. All our raw, uncontrolled, undirected urges are aspects of the id division of the personality. When uninhibited, or unsocialized, these impulses form the pleasure-seeking aspects of behavior. When dammed off to such an extent that these energies pile up, there is the danger that they may spill over, so to speak, and force their way through the ego controls as symptoms and emotional outbursts.

In the course of the development of the individual, the asocial urges which constitute the id meet environmental obstacles and must be curbed or given expression only in socially acceptable and safe forms. The child soon learns that many of his impulses cannot be directly satisfied or, if gratified, result in other more serious frustrations. The forces which keep the id impulses in check as an adaptation to the pressures of the outside world comprise the ego. While the ego derives its energy from the id, it develops as a consequence of the child's experience with his environment. It acts in the service of the id instincts, modifying them, inhibiting them, and seeking outlets for them in accordance with external reality.

The aspect of the personality which is concerned with the moral or socially approved side of behavior is called the "superego." The superego is analogous to our common concept—conscience. It arises as a result of the process of introjecting or internalizing social pressures so that they eventually become self-demands. In other words, these social pressures become demands which we make upon ourselves even when there is no longer any outside pressure. For example, the process may begin as a prohibition on the part of parents not to smoke. Later on, the individual may refuse to smoke, feel guilty about it, or find it unpleasant because he thinks that it is wrong to do so even though his parents are no longer around to punish him. He has taken on some of their values as his own and may cease to recognize where he originally got the values.

The act of mediating between the id forces and the demands of the external environment is a difficult task for the ego. To preserve the integration of the psychological apparatus of the individual, the ego makes use of a number of techniques or mechanisms. Symptoms are compromise formations in which the ego, unable to cope effectively with piled-up urges, lets them escape in the form most economical to the organism. There is no need to describe the various mechanisms which Freud and later workers have postulated for the ego. They should be familiar to anyone who has studied abnormal psychology. The student will recognize repression, regression, rationalization, sublimation, and projection as some of the terms which have been used to describe the ego mechanisms. They are so common in clinical psychology that regardless of the theoretical position one takes it is indispensable that they be understood. Recognition of their great value in our understanding of behavior can be seen in the frequency of their use in our everyday language.

In addition to those Freudian concepts which we have already discussed, there is one which has had a tremendous and controversial influence on psychological thought. The notion of unconscious motivation did not really originate with Freud. However, its elaboration and wide dissemination may be traced directly to Freud's writings. The cultural impact of the concept is probably as impressive as its effect upon psychology itself. The idea that we may do things without being able to verbalize or identify the motives behind our actions has become a common lay belief.

There have been a great many different interpretations of the terms "conscious" and "unconscious." Students who are familiar with the development of behaviorism in this country will recall the violent objections raised by Watson and others to any form of "mentalism" such as consciousness. Writers outside the area of psychoanalysis have suggested that we think in terms of levels of awareness rather than conscious and unconscious. For others, conscious and unconscious have to do with the ability to verbalize any material. In still other instances, unconscious has implied stimulation below the perceptual threshold of the subject. In psychoanalytic theory the

great bulk of our psychological processes are said to be unconscious but exceedingly active as determinants of our behavior. A great deal (although not all) of the unconscious phenomena is under high pressure to be discharged but is restricted from consciousness by the continual censorship activity of the ego. It has been in this dynamic sense that the concept of the unconscious has been most bitterly criticized. The Freudians have been accused of populating the mental apparatus with little "spooks" who stand guard over the mystical unconscious of the person, closing the door on some impulses and allowing others to come through to consciousness.

Since, according to the psychoanalyst, the important motivations and ego mechanisms are unconscious, they must be revealed to the psychologist in some way if he is going to succeed in understanding the individual. Fortunately, the unconscious material is discharged in accordance with whatever manner the ego finds to do so. Examination of the ways in which they appear in behavior, dreams, and in the person's verbalizations in therapeutic sessions and on diagnostic tests allows us to make inferences about these motivational forces and the defense mechanisms which the ego is employing to cope with them.

Other Concepts. There is a great deal more to psychoanalytic theory which we have not been able to sketch here. No group of theorists have been so prolific in their writings. One of the contributions of Freud which should be at least touched upon here concerns the development of the psychosexual life of the individual.

The normal development and differentiation of the sexual urge is considered by the psychoanalyst to proceed in an orderly sequence from oral, to anal, and finally genital sexuality. The first activity of the infant is sucking, which serves both the function of obtaining nourishment and of giving pleasure. The organization of the pleasure activities around the mouth has been called "oral" eroticism. Ordinarily this is gradually superseded by anal interests toward the end of the first year of life. Overindulgence in the oral period, however, leads to the fixation of interest in oral activities which take the form of excessive talking, eating, etc., and in the development of ambivalent attitudes toward libidinal objects (such as destruction of loved objects by biting to incorporate them) and general tendencies of envy, curiosity, generosity, or selfishness (these latter two often alternate). In the adult sexual sphere such fixations may lead to oral perversions. If underindulged, the personality characteristics of clinging, a dislike of being alone, impatience, and cruelty may result. Disturbance of oral sexuality may also lead to sadistic tendencies. In the normal development, oral activities are used for the necessities of food and speech. Oral activity for normal pleasure may later occur as a secondary feature of genital sexuality, such as kissing in sexual foreplay.

The next phase of erotic organization is "anal" sexuality. It comes into

prominence toward the end of the first year of life through the influence of parental training and concern over the function of elimination. Anal characteristics include the traits of orderliness, parsimony, and obstinacy. In more severe forms, such characteristics as pedantry, miserliness, and continual angry defiance may result. Persons whose libido is fixated at this level of sexual development will show preoccupation with the bowel functions and are apt to develop anal perversions.

The "genital" or adult level of sexuality begins with increasing sexual curiosity. As the genital organization proceeds, interest in objects outside the body as sources of gratification increases. Parents then become the source of gratification and are taken on as primary love objects. Concepts like the Oedipus complex are found in this phase of the theory of psychosexual development. This phase, like the pregenital developments, is also subject to abnormal fixations.

We have described here only the sketchiest sort of outline of the Freudian concepts of psychosexual development. A fuller treatment of it will be found in a later chapter on psychoanalysis as a form of psychotherapy. However, in passing we should like to point out to the student that, by stressing the importance of psychosexual development for later personality, Freud has made some use of classification by types. For example, as a consequence of fixations at the oral level of development the adult is said to show characteristics such as overtalkativeness, overindulgence in eating, or excessive curiosity, envy, and oral perversions. These kinds of persons may be called "oral" characters or types. The psychoanalytic system of personality description actually makes use of many kinds of psychological types. Terms like sadistic, narcissistic, homosexual, obsessive, etc., have been used to classify people who, as a result of features in their psychosexual development, have developed certain personality characteristics in later life. In this sense, therefore, psychoanalysis actually yields a form of typological as well as dynamic representation of personality.

There is probably no theory of personality which has endeavored to cover as many of the important aspects of behavior and as many of the minute elements as the psychoanalytic theory. Fitted into the one framework are such divergent observations as everyday slips of the tongue, dreams, physical symptoms, and, in fact, nearly all the possible descriptive characteristics of behavior. In this completeness of effort it is really unique among personality theories. It has probably been the most criticized and the most dogmatically accepted of all the ways of viewing human behavior. It has had enormous influence on our everyday way of life as well as on the field of psychology itself.

Theoretical Offshoots. A number of movements have arisen out of the Freudian doctrines which either have modified the original points of view or have been at great variance with the over-all Freudian scheme. None of

these has prospered so well as the original theory, but as a group they have had considerable influence.

For example, Alfred Adler (1917, 1924), a student of Freud, formed a separate theoretical movement known as "individual psychology." Adler's chief modification of Freud's system was an emphasis on "will to power" as the main motivating force in people. This motive was believed to arise from the helplessness and inadequacy of infancy and to lead to the development of an inferiority complex. The individual was described as driven by attempts at compensation for this early inadequacy. In addition, physical or social defects might become exaggerated in the mind of the child. These defects were apt to result in a style of life in which the individual attempted to compensate for the real or imagined inferiority.

Another such movement away from the strictly Freudian approach was stimulated by C. G. Jung (1916, 1923), a close friend of Freud. The movement has been called "analytic psychology." Jung emphasized what has been called the archaic or collective unconscious which consists of inherited dispositions to think in certain primitive or archaic ways. These inherited dispositions, as well as repressed personal conflicts, are the determiners of behavior. For Jung the libido had a much broader connotation than for Freud. It included Adler's will to power as well as the sexual urges. It had moral as well as sexual aspects which were in continued conflict.

Jung is perhaps as well known for his concept of extraversion-introversion as for any of his modifications of Freudian theory. He also introduced the word-association test as a means of identifying complexes in neurotic individuals, a tool which is still being used by clinical psychologists.

In recent years writers who call themselves psychoanalysts hold a wide range of points of view, differing in one or another respect from the Freudian concepts. The importance of the Oedipus situation in psychosexual development has been challenged, especially by Horney. Greater emphasis has been given to cultural factors. Rank, Fromm, Horney, and Alexander are some of the current psychoanalysts who have followed somewhat different paths but have, in the main, kept to the general psychoanalytic format.

Field Theory. In 1935, Kurt Lewin published the first of his writings on personality. Although the original writings were incomplete, heterogeneous in topic, and difficult to follow, they aroused interest because of the unique conceptions they contained. His later works (1935, 1936, 1938) have attempted to enlarge on the conceptual system introduced in his first publication. Because Lewin's style makes difficult reading, the student who desires to get a more complete account than we can give here might profitably consult a monograph by Robert Leeper (1943) entitled *Lewin's topological and vector psychology.*

Like the other dynamic theorists, Lewin made free use of hypothetical constructs. He believed strongly that psychology could not be simply a study

of stimulus-response relationships but that the complexity of behavior required the use of inferences about the determiners of behavior. Lewin's system focused mainly on two aspects of psychological events—motivations and the situations to which people respond. Whereas the behaviorists emphasize the situation and the response, field theory stresses situations and motives.

Life Space. Lewin's approach to the study of stimuli was phenomenal in nature. Like Murray's formulation, it described the situation to which individuals respond in terms of its impact upon the person. Thus the stimulus situation included the person's needs, past experiences, potentialities to action, and all the behavior possibilities which the person perceived his situation as having.

The term which Lewin has given this total psychological environment is the "life space." He pointed out that if there were five behavior possibilities in any particular situation, and the individual perceived only two of them, then only these two possibilities were part of the life space or psychological environment of the person. The other three unrecognized alternatives belonged to the objective environment which Lewin called the "foreign hull" of the life space. In other words, Lewin made the point that people behave in accordance with whatever they believe is the objective situation. If we are going to describe the stimulus situation or environment of the individual, then it is only this psychological environment which we need to include. The life space is the psychological event of importance in human behavior.

While this is no new idea (Murray defines press in accordance with its perceived implication for the individual), it is a cardinal concept in Lewin's formulations. At the same time he does not believe that the foreign hull or the objective environment is entirely unimportant. Although it is not part of the individual's life space, it may influence it. For example, the tax appropriation for public schools in Maryland is not part of the life spaces of school children of that state. It is not possible to understand their behavior in terms of this aspect of the objective environment. But it does affect the life spaces indirectly in so far as it has an influence on school conditions and the quality of teachers.

The contents of the life space include the totality of facts which determine the behavior of a person at a certain moment. Lewin did not imply by this observation that such facts must be conscious, but rather implied that they are psychological facts in contrast to objective ones. It is perfectly possible, according to Lewin, to think of many of these facts existing without reference to conscious processes. In fact, the individual may be unaware of them in the sense that he cannot verbalize them. As in any system which makes use of constructs, the life space must be inferred from the individual's behavior. It is the only relevant area of study for field theoretical psychologists.

Forces, Valences, and Barriers. Force is the hypothetical construct Lewin postulates to refer to the motivational aspects of behavior. A force is what directly produces any reaction. Forces have three qualities: strength, direction, and point of application. They may be experienced consciously as urges toward particular goals or vague restlessness. Forces are inferred from movements toward or away from objects and situations or by the presence of tensions within the individual.

Objects, goals, or ways of achieving goals obtain *valences* for the individual in terms of the forces that are operating. These valences may be positive or negative in accordance with whether the objects are reacted to as desirable or undesirable. Valences, therefore, are determined by the kind of need which they are perceived to fulfill for the individual.

Barriers are characteristics of the situation which block or slow down the approach of the individual to a goal.

The individual's behavior is seen as a resultant of forces operating on him at any moment. The behavior is directed toward goals (psychological regions) which have the strongest positive valence and away from regions of negative valence. Conflict may be produced when two regions of positive or negative valence involve opposing psychological directions or when the same direction contains both positive and negative regions.

Topology. In order to describe the characteristics of the life space of an individual (which includes forces, barriers, goal regions, and valences), Lewin borrowed from a branch of mathematics called "topology." The resulting system involves the use of diagrams of direction, distance, and force to graphically represent the characteristics of the life space of the person. Each behavior possibility is identified as a region. To represent the motives or forces, topology makes use of arrows (called "vectors") which indicate the forces acting upon the individual and the path which they tend to induce the person to take. Strength is represented by the arrow's length, direction is indicated by pointing it to the appropriate regions in the diagram of the life space, and the point of application of the force is shown by placing the arrow point against the circle indicating the person as a whole or against the particular region within the person which is involved. The valence of a region is indicated by plus or minus marks. Strong positive valences may require one, two, or more plus signs, and similarly, minus signs indicate negative valences.

Within a person, systems of tension may also be diagramed. Lewin speaks about the perceptual-cognitive-motor regions (called motoric regions) of the personality on the one hand and the need systems on the other. The motoric regions operate as a tool in the service of the inner-personal needs. The various need systems are diagramed by closed circles within the representation of the person. The interrelations between them are indicated by the thickness of the walls which enclose them diagrammatically. The more iso-

lated a system of needs is, the thicker is the boundary or wall enclosing that region of needs. When a particular need has been denied (that is, the action which would normally satisfy that need has been thwarted), another kind of action may often discharge the tension. A need system of this kind which can be readily substituted for another has boundaries which are highly permeable, a fact which can be indicated by thin walls as we have described above.

In topological representation of the life space, direction and distance are not considered in the usual geometric sense. What is really represented is not physical distance but psychological distance. This new kind of space geometry has been called by Lewin "hodology" from the Greek word *hodos* meaning a way or path. Lewin speaks, therefore, of hodological space. For example, the hodological path to go fishing does not involve the compass directions and Route 66, but includes such psychological considerations as putting gasoline in the car, hiking over 2 miles of rough terrain with its attendant pleasure and fatigue, and overcoming the wife's objections. The student who has not studied is not really a physical distance (home to school—perhaps 5 miles) from passing his examinations but may be a long way off psychologically. The length of the path will therefore be diagramed accordingly. Distance and direction, for Lewin, are described psychologically in his topological diagrams. The diagrams are merely ways of schematizing the characteristics of the life space of an individual. To make this process of diagraming a little clearer to the reader, Fig. 6 shows some of the characteristics of field-theory diagrams.

Anhistoric Emphasis. Many of the features of Lewin's system of psychology stem from his conception of causation. There are two kinds of causation, according to Lewin. One is *historical.* The question which is asked is, "What previous events have caused this particular situation to come into being?" An event might then be explained in terms of past conditions such as parental relationships, school experiences, and the like. Lewin believes, however, that the only kind of causation that science can deal with is *systematic causation.* The explanation must pertain only to relationships at any moment in time. The cause of the event consists of the properties of the life space at that particular moment. We must investigate processes occurring simultaneously within any time interval.

This insistence of Lewin that we confine ourselves to the instantaneous event has met with considerable justifiable criticism. Lewin's experimental work, as a matter of fact, gives evidence that he is not so severely bound by this belief. It is difficult for most psychologists to see how it is possible to make any predictions about future events without taking a historical frame of reference. They tend to argue that the closest we can get to systematic causation is to study the conditions immediately previous to the event in question. When the event has happened, we can only then find out what the

relevant conditions were. Prediction must therefore be historical, even if, in the long run, we try to make our observations closer and closer in time to the event so that they become almost contemporaneous with it. The fact of the matter is that, to understand the individual's life space, we must include knowledge about how he has reacted in the past to be able to predict his present or future behavior. We must have laws which describe the relationships between earlier events and subsequent effects.
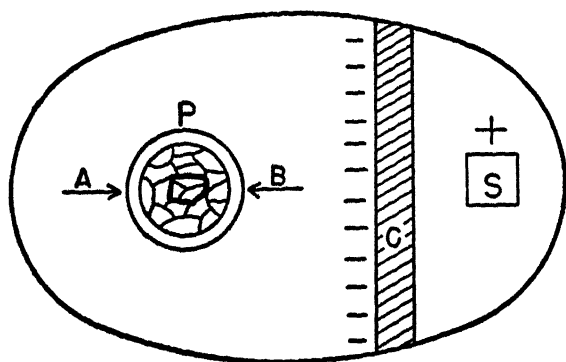
Fig. 6. Diagram of field, valences, and vectors in a conflict situation. (From Harsh, C. M., and Schrickel, H. G. *Personality development and assessment.* New York: Ronald, 1950. Pp. 316–317. By permission of the publishers.)

In Fig. 6 we have devised a diagram to illustrate the man P in the cafeteria who wants to buy strawberry shortcake S for his dessert. S is an object of positive valence, as indicated by the plus sign placed above it. The vector A pointing in the direction of S shows P's awakened need or tension for S, while the barrier C (lack of money) is shown as developing negative valence by the minus signs lined along it. The vector B indicates the tendency to move away from C. The two vectors pointing in opposing directions indicate *conflict* in P. The entire figure is enclosed to show that this is the life space of P at the moment, just as P is enclosed but within the field. As P's locomotion, tensions, etc., and the valences and vectors of the field change, the diagram would be changed to a series of different diagrams, each giving an instantaneous cross section of the dynamics operative within the field at each moment. The sign for the personality P is complex and not simply an enclosed homogeneous area. The individual P is symbolized as a kind of field or system within the larger field, with its own subareas indicating different tensions or needs, habits, sensory functions, etc. The ego is a dynamic system maintaining its own integrity in ever-shifting equilibrium as it is acted upon by, and acts upon, its environment. In fact, only the integrity of the ego makes possible a life space and a physical space time, or external world. The boundaries of the ego shift, however, so that at one time it may extend no farther than innermost experiences and feelings, such as during periods of silent prayer. At other times it may extend beyond one's skin and include one's clothing, personal belongings, and distant friends. This variability in the boundaries of the ego does not mean that everything and anything can be incorporated into the particular personality.

The anhistoric aspect of Lewin's theoretical position represents a real weakness in his scheme. He has tended to ignore such historically determined things, for example, as laws of learning. Recognition is given by Lewin to the notion that the life space may be restructured as a result of changes in the field. However, how these changes come about is not clearly and adequately dealt with. Lewin has concentrated upon the stimulus situation and the motivational aspects of events, but the responses themselves and how they are established have been extremely underemphasized.

Phenomenology. Earlier in this chapter we made a rough distinction between the extreme behavioristic way of approaching behavior and the approach followed by dynamic psychologists. We observed that the degree of emphasis on motivation as a determinant of behavior was one of the chief differences. We also noted that the dynamic psychologist tends to be more willing to make use of hypothetical constructs. Other distinctions have been made. For example, the extreme behaviorist tends to establish general laws of behavior and in doing so emphasizes the ways in which people are alike. Their approach follows more closely along the lines dictated by normative statistical usage.

While no science can proceed without attempts at the formulation of general laws, the normative approach to personality is likely to ignore or minimize individual differences and their determinants. The clinical psychologist finds himself with a great many psychological laws of behavior which are not capable of effective application to the patient in the clinic. It is not surprising, therefore, that the clinical psychologist feels considerable dissatisfaction with the more academic, behavioristic, normative kind of psychology. The phenomenal frame of reference is partly a statement of that dissatisfaction and partly an attempt to find more suitable means of looking at the individual case. There is some real doubt at the moment that leaning over completely in the direction that the phenomenologist has gone will solve the problem. Phenomenology is not an original approach to behavior. Its major tenets may be found scattered throughout other systems of personality description like field theory, psychoanalysis, and the needs-press formulation of Murray.

Phenomenal Field. The major tenet of phenomenology was described by Lewin in his concept of the life space and his differentiation of the psychological and objective environment. Murray took a phenomenological viewpoint when he discussed press as the individual's expectation of the effect the stimulus situation is exerting or will exert on him with respect to his system of needs. In using the personal frame of reference, the phenomenologist is merely arguing that we should observe human behavior from the point of view of the behaver. The basic postulate of such an approach is that all behavior, without exception, is completely determined by and pertinent to the phenomenal field of the behaving organism. The phenomenal field, as

with Lewin's life space, is everything that is experienced by the individual at the moment of action. As with the field theorist, the term "experienced" does not necessarily imply consciousness, although a certain amount of the phenomenal field may be experienced as conscious material.

Phenomenology is not a theory of personality. It is really a frame of reference for describing and understanding behavior. The Freudian relationships may be dealt with in phenomenal terms. Snygg and Combs (1949), who have outlined this point of view, also include Gordon Allport as phenomenologically oriented. Most clinicians, in fact, feel at home with such a frame of reference. As in every other approach to the prediction of behavior, the phenomenal field must be inferred from what the person says and does.

Figure-Ground Differentiation. The phenomenal field is not a constant thing. It changes with the changing needs of the individual as well as with the changing external conditions. Like Lewin the phenomenologist is particularly weak when it comes to presenting clear principles for understanding the changing of the phenomenal field through experience. Learning is spoken of as differentiation of the figure from a figure-ground matrix. Increased differentiation of the field (that is, a solution or procedure, as in problem solving) is involved. In other words, learning is subsumed under the perceptual processes. A quotation from Snygg and Combs (1949, p. 40) should indicate the kind of analysis along these lines made by the phenomenal psychologist.

> The author had rented a garage in front of which was an electric light pole, about fifteen feet from the entrance. When he got into his car at 6:55 the next morning and began to back out to the street on his way to a 7:00 o'clock class, he discovered the light pole by crumbling his right rear fender against it. The following morning he was very much aware of the pole and cut his car sharply to the left to avoid it, with the result that the right front fender scraped against the open garage door. Two major obstacles had now emerged from the ground, the pole and the door. A fence made it impossible to push the door farther out of the way and the pole could not be removed; so it was necessary for him to discover a path by which he could back his car from the garage to the street without striking either obstacle. It seemed quite likely that, by continuing to do the best he could to avoid these obstacles as he backed out, he would eventually learn (by differentiation of visual, temporal and kinesthetic cues) to do so. However, such a course might require a considerable amount of time and cost more money than he could afford for repairs to the car. He was accordingly impelled to solve the problem more directly. Since he could drive into the garage without damage (because in driving ahead the field was more highly differentiated in terms of both visual and kinesthetic patterns), it was only necessary for

him to discover some way of backing out along the same path. By noting (differentiating) two or three landmarks as he drove in at night, it was only necessary for him to observe these points when he backed out the next morning. He had no more trouble during the rest of the summer in which he used that garage except for one morning when his alarm clock failed to ring. While he was backing out of the garage at 7:02 in a vain effort to reach a 7:00 o'clock class on time the urgency of the situation became the figure in his field, the landmarks dropped into ground, and he backed into the light pole.

As in learning and perception, the first awareness was of the gross situation, and the essential cues and orientation points did not emerge into the figure until the behaver became aware of his need for such details. The factors determining the degree and direction of differentiation were, again, the goal or need of the behaver, and the opportunities for differentiation that were available.

For the phenomenologist, therefore, behavior changes largely through the changes in the field brought about by changing needs and the attendant alteration of figure-ground perceptual relationships. The process of differentiation ceases when the need is satisfied or the activity is abandoned. It is difficult to see, however, how the above way of describing learning to drive out of a garage or the use of the figure-ground analogy adds anything to our previous understanding of the event. It represents a description of the events, which we usually call learning, by a different set of words.

Phenomenal Self. According to Snygg and Combs the phenomenal self includes all those parts of the phenomenal field which the individual experiences as part or characteristic of himself. It is that aspect of the field which we refer to as "me." The usual boundaries of the self are the skin and clothing, but they may be extended to objects which we may identify as part of ourselves. Possessions, love objects, parents, and other kinds of things outside our physical skin boundaries may be reacted to as part of this phenomenal self. Interest in this idea has recently increased among psychologists. Symonds has recently written a book which is concerned with the phenomenal self and the ego (1951). Elaborating on the concept of the phenomenal self, Snygg and Combs (1949, p. 56) write:

> It is a common observation that many a man acts with regard to a crumbled fender as though it were a personal violence to himself. The opposite is also true. Sometimes the phenomenal self may be defined in such a way as to exclude a portion of the body as when circulation in the foot or fingers is cut off. This latter aspect is illustrated in the case of a young woman who applied to one of the authors for graduate work in psychology. Noting that she was very badly crippled, he asked if she had considered the degree to which her handicap might make things difficult

> for her. "I don't have a handicap!" she snapped. Clearly she had so defined her "self" as to ignore her crippled legs.

In the phenomenal system, then, the individual reacts to the phenomenal self as it appears to him rather than in terms of the objective situation. People play roles in various social situations, maintaining as they do, pictures of themselves which determine how they will behave.

Self-concept. In addition to the phenomenal self, the phenomenologist differentiates another aspect of the total phenomenal field which is included under the self. He points out that many aspects of the phenomenal self are extraneous factors which are not essential to the prediction of behavior. Snygg and Combs (1949, p. 112) illustrate:

> Although the tip of my little finger is certainly part of my phenomenal self, it is seldom differentiated into figure in the course of my daily life. The same is true with respect to many other ideas and concepts which are part of my phenomenal self. It is only rarely, for instance, that I have to fix a leaky faucet and conceive of myself as an amateur plumber. Nor is my occasional concept of myself one likely to be of major importance in understanding my behavior. On the other hand, I conceive of myself as a professor six days a week and sometimes on Sunday and holidays. This description of myself is very frequently in figure in my phenomenal field and exerts a very considerable influence on my behavior a good deal of the time.

The self-concept, according to the phenomenal psychologist, is made up of those parts of the phenomenal field which have been differentiated by the person as definite and relatively stable characteristics of himself. The phenomenal field determines all behavior. However, certain aspects of the field are more important than others. From the phenomenal field is abstracted the phenomenal self, and finally, the self-concept may be further subdivided as the most specific and important aspect of the phenomenal field and the phenomenal self in determining how the individual will behave.

The Basic Human Need. Phenomenal psychologists argue that the mere listing of human needs such as is done by Murray is an inadequate way of dealing with people's strivings. They believe that one fundamental need in human beings is required to explain and predict behavior. Their conception of such a basic need is somewhat analogous to the sexual instinct of the psychoanalysts. The phenomenologist employs a concept that is a psychological application of the biological concept of homeostasis. Simply conceiving of people as governed by efforts at physical self-preservation is insufficient to understand behavior since many forms of human activity are not directed toward physical survival. As a matter of fact, people's actions are often physically harmful and even suicidal in nature. Therefore, the phenomenologist

maintains that the basic human need under which all other needs may be classed is the preservation of the phenomenal self. This notion is basically similar to the psychoanalyst's concept of the ego ideal. All people seek to fortify and preserve their concepts of themselves. Snygg and Combs (1949, p. 61) write:

> The soldier in wartime is not torn between a desire for self-destruction and a desire for self-preservation as he faces the coming battle. On the contrary, he is concerned solely with the preservation of or enhancement of his phenomenal self. Although the situation will vary from individual to individual, it might roughly be described as follows: He may risk death on the one hand to *preserve* his phenomenal self against becoming the kind of person who "lets his buddies down" and on the other hand to *enhance* his phenomenal self by being the kind of person who is "one of the gang," or as brave as the rest.

It should be clear from this brief review that the area of study of the phenomenologist is the phenomenal field which includes all the determinants of behavior. Within the phenomenal field is the phenomenal self which is further subdivided into the more important self-concept. This self-concept represents the characteristics which the individual reacts to as the real "me," the stable and consistent aspects of the self. Moreover, the individual is driven by needs which may be subsumed under one basic drive—the preservation of the phenomenal self. All behavior may be understood as representing the ways in which the person attempts to satisfy this need in the presence of stimulus situations which he interprets according to its relevance for that basic need. Those aspects of the situation which are relevant to the self-concept at the moment are figure, and all else is ground. Differentiation of the figure changes and progresses in accordance with the state of the sub-needs which are operating at the time.

Overview. It is now desirable for us to examine what the various theories concerning the nature of personality have in common and to identify their main differences. It should be clear that, whatever theoretical approach we discuss, three kinds of variables will be found in each. All theories of personality are concerned with stimulus situations, an organism which has certain specified characteristics, and responses. Theories of personality differ in two main ways: *First, they vary in respect to which of these three kinds of variables are emphasized. Secondly, the kinds of characteristics (constructs) which are imputed to the organism represent the other main category of difference.*

It is important to remember that all the conceptions of personality are grounded in basically the same data, that is, in the behavior of the individual in a variety of circumstances. This is actually all that anyone can ever observe. The correlations of stimuli and responses are objective facts, derived

from observation. All else is inference designed to make these stimulus and response relationships meaningful to the observer. In following this overview, we have organized the discussion into three parts. We shall deal first with the theoretical handling of the stimulus situation, then with the response, and finally, with the characteristics of the organism itself.

Stimulus. No theory about the nature of personality can completely disregard the significance of the situation or stimulus as a behavior determinant. However, it is given minor treatment in some of the approaches and a dominant position in others. For example, the trait approach to personality deals mainly with the characteristics or structure of the individual and generally ignores or underemphasizes the characteristics of the situations which determine the individual's behavior. Allport (1937) does not devote a single chapter to the stimulus situation itself. While Cattell (1950) shows considerable concern over the importance of family and culture in the development of traits, he considers psychological events mainly in terms of human characteristics rather than stimulus situations.

Typologists, most of all, have a tendency to disregard the role of the stimulus. Certainly an emphasis upon body types (Kretschmer, 1925, 1926; and Sheldon, 1940, 1942, 1944) as personality determiners is not likely to encourage the consideration of the role of situations unless body structure is seen to influence behavior in only the most limited sense.

Even Freud has been criticized by some psychologists and later psychoanalytic writers as having given culture and situations too limited a position in his personality theory. His emphasis upon biologically determined drives has been sharply attacked. More appropriately, however, his insistence upon infantile development and experience as the major factor in the formation of adult personality does, in fact, minimize the significance of the current situation in which the individual is adjusting. Later psychoanalysts like Horney (1937, 1939) and Alexander and French (1946) have pressed for a greater emphasis upon culture and the situational determinants of behavior.

On the other hand, some theoretical viewpoints have given the chief place of interest to the stimulus. The behavioristic approach with its stimulus-response formulation comes to mind most readily in this connection. This point of view has led to the most intensive study of stimuli, or cues, and their relationship with response processes. In fact, the stimulus-response theorists have been attacked on the grounds that they have done so to extreme and that their work has centered about artificial laboratory situations.

Murray (1938) has treated the stimulus situation with a phenomenal emphasis. He has given it prime importance in his theoretical system. His use of the term "press" to characterize the significance of the situation places emphasis upon the way the stimulus is perceived by the individual (*i.e.*, facilitating or obstructing to the gratification of his needs).

The phenomenologist and field theorist also take this latter frame of ref-

erence with regard to the stimulus. Both make a sharp differentiation between the objective environment and the psychological environment. The way the individual interprets the stimulus situation is thought to determine his behavior. Situations are therefore studied from the point of view of the behaver and are given a primary role in human behavior.

Response. Responses and their characteristics are, of course, studied most intensively by the stimulus-response theorist. At one time the most extreme behavioristic writers viewed personality as the sum total of the responses, particularly the habitual ones, of the individual. While this is less true today than it was in the days of Watson, the response remains a major category of study for the behaviorist.

Responses may be looked upon in the most behavioristic sense as simply the overt behavior of the individual. This is what we observe. On the other hand, they may also be seen as styles (Adler, 1917, 1924) or inferred ways of gratifying the person's needs (mechanisms). The former might be described as trait elements or surface traits by Cattell (1950), simple responses or phenotypical traits by Allport (1937), and actones by Murray. As mechanisms, responses would carry the connotation of source or genotypical traits. Responses may also be classified according to types. For example, Jung's (1923) extroversion-introversion dichotomy is an example of such a classification.

Murray (1938) uses the term "actone" to refer to the motor response of the individual. In Murray's formulation, actones are only of secondary importance. What is significant for him is the need that they fulfill.

For Guthrie (1935), who is a stimulus-response theorist, movements themselves are of paramount importance since they are one of the basic elements in associative learning.

In the psychoanalytic scheme (Fenichel, 1945) responses are of importance in so far as they give cues as to what ego mechanisms produced them.

In field theory and phenomenology, responses also carry only limited importance. It will be remembered that Lewin (1935, 1936, 1938) referred to response processes as part of the less important motoric division of the personality.

By far the most systematic study of responses in the mask sense has been accomplished by the S-R theorists who have been concerned with associative learning. The dynamic theories have preferred to soft-pedal the response aspect of behavior, seeing in it primarily a route to the underlying determinants of behavior.

Organism. Probably the main way in which the various personality approaches differ is in their treatment of the characteristics of the organism Theorists who are willing to make free use of constructs have suggested elaborate systems of interacting entities as part of the governing brain processes. Those who have been unwilling to use imaginary constructs have usually

struggled with more simple descriptions of the physiological characteristics of the individual which could be directly measured.

However, as we have pointed out before, most viewpoints today recognize the need for assuming the existence of a certain number of characteristics which cannot be directly observed. While the behaviorist makes the least use of them, he nevertheless does employ such concepts as drive, habit strength, etc. He sees drives as physical tensions. These tensions act as stimuli which become associated with the responses which have been previously successful in reducing the tension. Since the drive formulation is central to the S-R theory, the behavior of the organism cannot be completely understood without the study of drives and their organization within the individual. It is also recognized today that motivation cannot be understood in terms of tissue needs alone. It is essential to deal with social or learned motives as well. In fact, to the clinical psychologist and personologist, these are the most important ones to study.

If we examine carefully the various points of view which we have described in the earlier part of the chapter, it is not difficult to pick out and compare the constructs which these various theories introduce for explanation. Allport's motives are classified as genotypical traits. Cattell uses the comparable term "source trait." These are subdivided into dynamic, ability, and temperament traits. The body-type theories have tried to relate physical constitution to such variables as mood, energy, and predisposition to certain disorders. The physical structure which is measured may be thought of as the manifestation of some other characteristic (metabolic, genetic, etc.) which also determines personality and temperament. Murray speaks of needs and hierarchies of needs, some of which are dominant, depending upon the situation and which literally rule over the behavior of the individual. The controls over human behavior are said to reside in the brain, the physiology of which is relatively unknown at the present time. Freud postulated the existence of the id, ego, and superego as aspects of the psychological apparatus of the individual. Lewin used the term "forces" to identify the motivational side of behavior. The personality is divided into the need systems and the motoric. The phenomenologist sees the preservation of the self-concept as the basic human drive from which all other needs are derived.

Summary. The thing that is striking about all the theories, looked at together, is that the terminology differs but the concepts are quite similar. Urges, drives, needs, forces, motives—these are all ways of identifying the motivational determinants of behavior. While it is not true that all the frames of reference have made the same kinds of contributions to our understanding of human behavior—they have emphasized different things—it is true that to adequately describe and understand human behavior three things must be dealt with. Any system must make use of motivation (call it what you will—drive, urge, instinct, force, need), responses (actone, motoric, phenotypical

trait, style, mechanism) in some form, and the stimulus situation in which or to which the organism responds (phenomenal field, life space, stimulus, press). Given these three components organized in some fashion, it is possible to describe everything that is found in all our present theories of personality.

Moreover, we do not believe it matters greatly which system of thought one prefers. While clinical psychologists have leaned toward the dynamic theories and, above all, have tended to prefer the hypothetical constructs of the psychoanalysts, it is also possible to work effectively within the framework of the stimulus-organism-response theories. As a matter of fact, the contributions of the systems have been so complementary, particularly in personality measurement, that we are inclined to give the current advantage to the eclectic psychologist. All the points of view should be at least understood by the clinical psychologist.

PERSONALITY THEORY RELATED TO MEASUREMENT

The particular emphasis of any theory concerning the nature of personality will determine to some extent the kind of personality measurements which are attempted. In general, two main kinds of issues in personality measurement may be distinguished. On the one hand, we can be either normative or individualistic in our emphasis. A normative emphasis leads us to work with common attitudes or ways of reacting in terms of group membership. For example, a basic question here might be, "What is the difference in language behavior between schizophrenics and normals?" If we approached our measurement from an individualistic point of view, we would be more concerned with the language behavior of an individual schizophrenic or normal rather than schizophrenics in general. It would be more important to relate this use of language to the unique characteristics and experiences of the individual. One can readily see that the type of measuring tools which would be developed out of these two opposing emphases might be very different.

The other issue which determines the type of measurement one makes use of rests upon whether responses (descriptive) or underlying motivations (explanatory) are emphasized. In stressing simple response relationships one is apt to make use of objective observations of people doing things under a variety of situations. Objective tests which require the subject to make simple yes or no or multiple-choice answers will be sought. However, if the interest lies in inferring needs or motives, the personologist will lean toward tests which give ample opportunity for people to project these needs into their responses. These latter kinds of tests are rarely objective and usually require complex interpretations.

It is often true that a particular theoretical point of view may have been the stimulant for the development of some measuring device. If the technique proves useful, it is often taken up by clinicians with other systematic points

of view. In other words, it is not true that the stimulus-response theorists can use only one kind of measuring device, the field theorists another, and so on. Many of the tools may be used in common even though they had quite different theoretical origins. The growth of the personality-measurement field has been greatly stimulated by the various theoretical viewpoints.

In the next two chapters we shall discuss the problem of personality measurement itself. We might point out here, however, some of the specific connections between the type of measurement technique and personality theory. The use of objective tests, behavior tests, and self-report techniques which emphasize a normative approach to measurement has been stimulated largely by the stimulus-response, trait, and type theorists. This is particularly the case with those approaches which are less concerned with motives and dynamic traits and mostly interested in the simple responses of people and their consistency from one situation to another. The case-history technique has grown out of the applied clinician's interest in the individual patient and the historical dynamic theories of personality like psychoanalysis. Field theorists with their emphasis on the momentary organization of the life space would certainly not have encouraged such a historical approach. The projective test which provides the subject with an ambiguous stimulus situation has been primarily stimulated by the depth psychologies, that is, those theories like Freud's and Murray's which emphasized the importance of unconscious motivation. All the current personality-measurement techniques, regardless of their origin, are useful in certain ways to the clinical psychologist.

CHAPTER 7

PERSONALITY MEASUREMENT: I. BEHAVIOR STUDIES AND SELF-REPORT TECHNIQUES

We are now prepared to discuss the problems and techniques of personality measurement. Our purpose is not to give the reader intimate familiarity with the great variety of measuring instruments themselves. Competence along these lines requires direct experience with the techniques in the clinical situation. In this chapter and the one which follows we shall attempt to provide the student with basic knowledge which can serve as the groundwork upon which clinical competence might later be built.

The general plan of presentation of this material is in most ways conventional. Most survey discussions of personality measurement treat projective testing as a separate chapter or section because it features so prominently in clinical practice and research. We are doing the same. However, it should be pointed out to the reader that the projective approach to personality evaluation is not limited to the special techniques which shall be discussed in the next chapter. Many of the behavior samples which are derived from the techniques of behavior study and self-report may be treated in much the same way as the special projective procedures. Whenever a person is confronted with a somewhat ambiguous situation in which the behavior represents his unique interpretation of the task, inferences about the underlying motives and mechanisms may be made by the observer. However, for the sake of convenience and simplicity we shall, at present, focus upon the characteristics which are measured by the behavior study and self-report approaches and leave our discussion of the projective aspects of personality evaluation for the next chapter.

The present chapter is organized into two main sections. In the first section we shall deal with those techniques which depend primarily upon observations of what the individual does, that is, his actual behavior in a variety of kinds of situations. In this case the behavior of the person, or an account of it, serves as the basis of evaluation. We have called this kind of procedure *behavior studies*. The second section will be concerned with techniques which measure what the individual says about himself. This has often been called the *self-report* approach and includes primarily the pencil-and-

paper questionnaires which are designed to measure personality traits, attitudes, and interests.

BEHAVIOR STUDIES

Whatever one's frame of reference about the nature of personality may be, the first question which is always asked is, "How does the individual behave?" The stimulus-response theorist is primarily concerned with studying this behavior and the stimuli which are associated with it. If one leans toward the dynamic point of view, this behavior is looked upon as merely the source of inferences about the motive systems and mechanisms which explain the behavior. Although the responses or acts of the person are of secondary importance to the dynamicist in understanding the person, direct observation of how the person acts is all that is ever seen, and observed behavior always becomes the basic data of investigation. What does vary with different theoretical positions are the kinds of situations observed, the measuring instruments used, the aspects of the behavioral event that are considered important, and the kind of conceptual scheme one might employ to describe and interpret the person's behavior.

In the preceding chapter on personality we have already discussed, to some extent, the latter two considerations, that is, the aspects of the event which are believed to be important in understanding personality and the conceptual framework for interpretation. In the discussion of behavior studies, we shall concentrate on the kinds of situations on which observations are commonly made, the major problems which confront us in such measurement, and the types of measuring techniques which are most frequently used.

Kinds of Situations. We may distinguish two types of situations in which it is possible to make observations of human behavior. The first involves observations in a completely *natural setting*. In such a situation the person behaves in real-life conditions with no awareness that he is being observed any more than usual. The second may be called the *test situation* in which the observer produces a somewhat more artificial setting. In this case the person must often perform with the awareness that he is being evaluated. In test situations, one need not always wait for the required event to happen naturally. It is possible to construct beforehand the situation in which one desires to examine the person's reactions.

The importance and values of test situations of all kinds are recognized by psychologists generally. In fact, most of the observations that are made clinically or in psychological studies are made in this fashion. Test situations make the job of observation a great deal easier and tend to reduce the inevitable errors of observation. Such situations may be standardized so that the reactions of different people may be more validly compared.

However, we must also recognize that the behavior induced by test situa-

tions is often distorted by the presence of the observer and by the fact that such situations are often very artificial. For this reason it is sometimes dangerous to generalize from these kinds of samples of behavior to other life situations. Because the advantages of test situations are so great, we have tended to depend upon them a great deal, and there seems to be a widespread failure on the part of psychologists to recognize the dangers of interfering with the organism's functioning in an effort to study it.

There is, moreover, an understandable reluctance to study people in the real-life situation because of its complexity and the difficulty of making reliable measurements. The advent of the one-way vision screen and the use of motion pictures and sound recordings has encouraged some brave souls to devise techniques for observing human behavior as it actually happens rather than in strictly laboratory situations. Many of our present-day procedures are compromises between completely controlled test situations and the more naturalistic life situation.

Natural Situations. There is, of course, virtually no limit to the kinds of natural situations which offer opportunities for psychological observation. The problems which arise concern the construction of techniques that may be used to record, measure, and organize these observations and the need for the avoidance of interference by the observer of the normal behavior. We shall discuss these problems in a short while.

In the child study field, psychologists have investigated both the solitary and social play of children through the use of specially constructed playrooms or in nursery schools (Murphy, 1937; Axline, 1947; Parten, 1932, 1933; Arrington, 1939; and Moreno, 1942). Children have also been observed in museums (Nielsen, 1946) and in various school situations. By the use of one-way vision screens, motion pictures, and sound recordings, it has also been possible to study psychotherapeutic interview situations (Raimy, 1948; Porter, 1943), etc. Increasing effort is being directed toward the study of social groups. Moreover, through recording techniques it has been feasible to examine more objectively the behavior of people around conference tables in political discussions or labor-management parleys. If a greater part had been given to this kind of observation in the military situation during the Second World War, there is no doubt that many of our current efforts with screening and selection would have profited greatly.

Test Situations. The conditions which we may include under this class of situations vary from the standard psychological test in which the subject must perform in some way, to much more complex conditions in which every effort is made to sacrifice as little as possible of the naturalness of the situation. By the use of behavior tests, psychologists have attempted to measure such characteristics as reactions to physical and psychological stress, leadership, initiative, stability, persistence, endurance, suggestibility, introversion-extroversion, and honesty.

It is possible, but often extremely difficult, to devise a relatively standardized test situation to observe and measure many forms of behavior. Great ingenuity has often been displayed in the construction of these situation tests.

Manipulation of the motivation of the subjects is probably the most complicated and difficult aspect in producing effective, natural-appearing test situations. While this represents a problem in the use of any test, the desire in normal subjects to do well makes this difficulty less formidable in the measurement of intelligence. However, getting the subject to perform in such a way as to provide the observer with a good sample of his characteristic reactions to most test situations is an extremely complicated task. It is often a matter of getting a subject to take the experimenter's instructions seriously or in a uniform way. This is particularly true in experiments where subjects must be subjected to psychological stress by telling them they are failing in some task. It is possible that some subjects do not become emotionally involved, in which case the experimenter has not succeeded in stressing his subjects.

In short, the establishment of realism and the successful manipulation of the subject's motivation offer the greatest difficulty in designing appropriate test situations. We shall see, however, that the problem of producing satisfactory test situations is actually even less formidable than finding adequate ways of observing and measuring what is going on.

Problems of Observation and Measurement. If the task of any observer were to count up the number of hits a subject makes on a target-pursuit test or to determine how many questions on a pencil-and-paper test he has answered yes, little difficulty in measurement would be encountered. Yet even this kind of observation is subject to some error. Special difficulties may be created by the problem of the interpretation of the results. However, when the task of the observer is to select from a complex behavior situation those features which are relevant or significant and then interpret them in accordance with some theoretical system, the problems encountered by the scientific observer are really multiplied. Let us consider some of these problems. Remember that tests are merely forms of standardized interviews or observations and that the problems of measurement discussed in Chap. 3 (norms, objectivity, reliability, validity, sampling) are applicable here.

Observer Reliability. Not only do most observers (even those who are trained) make a great many errors of observation, but various observers will often give very different accounts of the same event. This is particularly true when they are not extremely clear concerning what aspects of a complex event they are supposed to observe. Modern techniques of recording have greatly facilitated the task of the observer in at least making a permanent record of everything that has transpired. However, in many instances such records are not available. Even when they are, the problem of how all the information shall be abstracted remains. A pictorial or verbatim account of

what a person does or says is rarely the end product in the observation. It is often necessary to determine the extent to which an individual is aggressive, emotional, cooperative, and so on. The problem changes, therefore, from one of observing to one of judging. In either case it is necessary to obtain the degree of agreement between several judges. If two judges who are rating the behavior of the people under observation cannot agree about what is going on, then the conclusions must be of doubtful value.

In clinical psychological practice and research, the clinician or observer becomes the instrument of measurement and evaluation. Therefore, it is important to learn something of the characteristics of these observers. How well several judges or clinicians will agree depends, to a large extent, upon what it is they are judging, how much training they have, and how clearly the task is identified for them. For example, Wolf and Murray (1937) have shown that more agreement will be found when judgments must be made about outward characteristics like aggressiveness than about characteristics of the person's private experience. They also have data to suggest that the similarity of the subject to the rater is an important determinant of how the judge will respond to the person to be evaluated. Extreme or deviant characteristics are easier to rate than average characteristics. Also, whether the characteristic to be rated is socially desirable or not appears to affect the ratings given.

The psychological literature contains examples of both high and low reliability in the judgments of raters in psychological experiments. Ash (1949) finds very poor agreement, for example, between the diagnostic ratings of psychiatrists in using a five-category diagnostic system. On the other hand, Albee and Hamlin (1949) obtain very high reliability between two judges with the ratings of adjustment inferred from drawings. And Lazarus, Eriksen, and Fonda (1951) show high reliability for two judges in scoring a sentence-completion test.

Although between-rater reliabilities are often high, it must be borne in mind that this is not the only feature that is important in behavior ratings. The agreement might be good because both judges believe in common that certain features of the record are important (this could happen if both clinicians studied together), but in reality the ratings may be incorrect or meaningless. Nevertheless, no study of human behavior which makes use of the judgments of observers is adequate unless the experimenter has indicated the degree of agreement between raters.

The clinical diagnostician who must evaluate the behavior of a patient faces the same problem. If it can be shown that his judgments agree with other competent people, then even the most subjective kind of ratings may be said to have objectivity. Individual observer bias and error is theoretically ruled out when everyone can agree about the judgments made about a particular person or event. While this kind of objectivity is essential for scien-

tific appraisal, it is, of course, only part of the story. In most practical clinical work the demonstration of objectivity is costly and is often ignored. Satisfactory reliability is often assumed. A single clinician may make the evaluations. As in the case of Ash's study (1949) and countless other unknown instances, the reliability of the clinician's judgment may be poor.

Behavior Consistency and Sampling. The problem of consistency of behavior has always concerned personality theorists. It is important to know whether a person's reactions on any particular day or in any particular situation will be the same tomorrow or in a different situation. Obviously some forms of behavior are more stable than others. The question cannot be answered in the abstract but depends on which form of behavior one is talking about. It is easy to demonstrate inconsistency of some behavior tendencies; yet we know that our friends have certain characteristics which make them recognizable from day to day. The clinical psychologist points out that the motivations and mechanisms of the individual are highly consistent even though the behavior in different situations may vary.

However, in the behavior-rating situation, we are put in the position of having to generalize about the person's behavior (or motives, if that is what we are rating) from a small sample. We are rarely in the position of being able to follow the person about in order to say something about what he is really like. Everyone agrees in theory that a single or small group of behavior samples is insufficient to generalize from. The more situations in which we place the same individuals, the more valid will be the statements which we make about them. Practically speaking, since we can make only a limited number of these observations, we must select the types of situations carefully so that they may have the widest generality.

The problem of sampling is never completely solved. The number of observations that we must make depends on what we are trying to observe and what we can afford to be satisfied with. As in measuring intelligence, we can correlate the performance of a group of individuals with another performance of the same group of persons on the same or an identical test. This correlation coefficient represents the consistency of the person's performance from time to time. In this way we can determine whether people are equally persistent, aggressive, etc., from day to day or from situation to situation. In the process of individual evaluation, the more samples of behavior we have, the more adequate is our information. The samples should be representative of the kind of behavior we are trying to predict.

Normative Data. If we found that Jones behaved aggressively in a number of behavior-rating situations, we might be tempted to say that Jones was an aggressive fellow. However, this kind of judgment about Jones is really meaningless (even if we have an adequate sample of Jones's behavior and have obtained good reliability of judgments) unless we have some reference or standard with which to compare Jones's actions. It may be, for example,

that anyone else in the same situations might have acted in essentially the same way. Some norms are needed if Jones's behavior is to be appropriately interpreted. We might have compared Jones's behavior in one situation with his behavior in another. But if this information is to be useful, we should know how Smith, Brown, etc., behaved. Is Jones more aggressive than they are, or less so, or more variable? Or does he respond more aggressively than other people do? Even if one wished to understand Jones by a complete examination of his whole life history, it is necessary to know something about what other life histories are like. For this reason normative information is needed about the situations in which people are being rated.

Whether these norms are in the clinician's head and arise out of his experience with people or are developed through experimentation, they are an essential part of the evaluation of a person through the behavior-study technique. The extensive experience of the psychiatrist and clinical psychologist with neurotic and psychotic people needs to be supplemented with information about what normal people are like. The danger of inadequate normative information is illustrated by a psychiatrist's remark, "Everyone needs psychotherapy" or by the Rorschach test worker's comment after giving the test to some college students, "I never realized how many sick people there really were." This statement reflects this clinician's (and in fact, widespread) ignorance concerning how normal people really perform on the Rorschach test.

Techniques of Observation and Measurement. Many varied types of techniques have been evolved by the psychologist to cope with the problems of observation and measurement that have been discussed above and to capitalize on the possibilities of both the natural and test situations. We have already mentioned the use of sound recordings and motion-picture records of behavioral events as means of reducing observer error and bias. As ways of recording events these devices are excellent. However, interpretation still depends upon abstracting the enormous amount of information derived, selecting appropriate aspects of the event, and, if possible, reducing them to quantified or manageable form. As examples of representative techniques we shall discuss time and episode sampling, sociometry, rating scales, and the use of behavioral signs or indices.

Time and Episode Sampling. Two similar techniques have been devised to quantify observations made upon the natural activities of children. Although they were originated for use in nursery schools and have been used almost exclusively with children, they might be employed successfully in some adult situations. Arrington (1932, 1939), Parten (1932, 1933), and Murphy (1937) are some of the workers who have made significant contributions to this form of observation of behavior. Arrington has reviewed most of this work up to 1939.

In the case of *time sampling,* an individual or group of individuals is

observed carefully and inconspicuously a specified number of times for a brief period. During each of these periods his activities are classified, and at the end of the series of observations the number of time periods which were occupied by a particular type of behavior is noted. For example, in a well-known study using the time-sampling technique, Parten (1932, 1933) observed the social behavior of nursery-school children. One observation of each child was made on any one day. The observations were made during free play over a series of 60 one-minute periods. Through preliminary work Parten had devised a group of descriptive categories for what she called "social participation" and "leadership." During the study proper, for any one-minute period she made a decision as to which of the previously defined categories best described the child's behavior during that period. In addition to studying the development of each form of behavior, Parten was able to compare her scores with the ratings of teachers.

In *episode sampling* some discrete form of behavior or episode, such as an argument, a temper tantrum, or asking a question, is studied over a longer period of time than in the case of the time sample. For example, daily observations may be made for an hour or so over a period of days or weeks. The score is the number of times an episode, as defined previously, occurs. This technique is useful only when the episode represents a conspicuous form of behavior which is not readily missed by the observer and occurs somewhat too infrequently to justify the lengthy time-sampling procedures. Murphy (1937) has used the technique of episode sampling in studying sympathetic behavior in nursery-school children. She observed the number of times a child indicated concern over another child who was in trouble or distress. She worked with two groups of children for 188 and 234 hours, respectively. Detailed descriptions were recorded of each episode in an effort to study the conditions which produce sympathetic behavior in children and the way it is displayed.

Time and episode sampling as techniques of measurement allow us to study real social behavior which we could not study in the laboratory and enable us to quantify the observations at least in the form of simple counting. It should be possible to study a great many aspects of social behavior by this means. The chief drawbacks of the technique are that it is very costly in time for a limited amount of information and that it is rather difficult to observe the natural behavior of adults in this way, since they would respond unfavorably if they knew they were being observed. The technique is better adapted to personality and social psychological research than it is to the study of individuals for the purpose of diagnosis and evaluation.

Sociometry. In 1934, Moreno, a psychiatrist, introduced an interesting technique for studying the organization of social groups. He called the technique and the theoretical structure on which it was built "sociometry." The primary notion which Moreno put forth was that a social group has stability

only if the internal arrangement of the group is satisfying to its members. Within any group certain persons seek each other out and establish smaller groupings, the members of which get along well. The organization of groups may vary from those which are knit around one popular person who is sought by all or most of the members to triangles and chains in which one person seeks another who in turn prefers a third, and so on. Often in these groups, one or several people are ignored or avoided by the others. These persons are called "isolates." As a result of his studies with the sociometric technique, Moreno described the main types of social organizations which he observed.
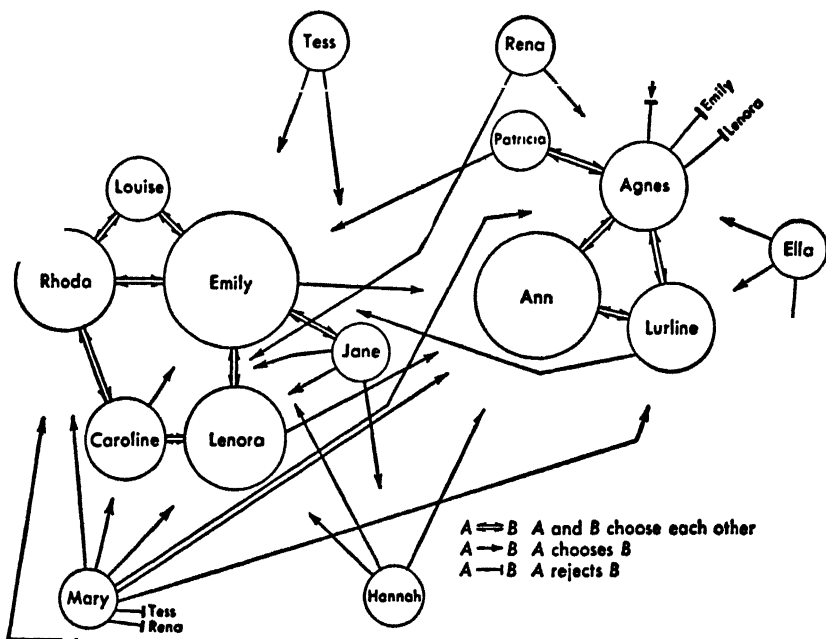
FIG. 7. Sociogram for a class of fourth-grade girls. (From Cronbach, L. J. *Essentials of psychological testing.* New York: Harper, 1949. P. 409. By permission of the publishers.)

Fig. 7 is the sociogram of a class of fourth-grade girls early in the school year. Pupils indicated not more than three choices, and were also permitted to list any whom they would not choose. This sociogram reveals several patterns often encountered. There are two groups of cliques. In one Emily is the most sought-after person, with Jane, Lenora, Caroline, Rhoda, and Louise as accepted members. In the other group, Agnes is the key figure, with Lurline, Patricia, and Ann as members. Patricia, one notes, is not thoroughly integrated with the clique; while accepted by Agnes, she is also reaching toward Emily in the other group, rather than Lurline or Ann. Agnes, who might be a popular leader of all the girls, instead shows considerable hostility, rejecting three popular girls. Ella is a fringer, not chosen by any of the others. Tess is even more isolated.

The basic sociometric procedure (it may be modified in a number of ways) involves requesting the members of the social group under consideration to indicate their first, second, third, etc., choices for companions in any particular activity. The activity may consist of sharing living quarters, going to parties, etc. The technique is essentially a search for information concerning the choices of each person in the group. It is a kind of popularity contest. The choices which are obtained are usually plotted or diagramed on what Moreno has called a "sociogram" (see Fig. 7).

The value of the sociometric procedures is partly indicated by the fact that it has been used fruitfully in various kinds of psychological research, particularly in personality and social psychology. Research psychologists like Jennings (1937), Newstetter, Feldstein, and Newcomb (1938), and Hunt and Solomon (1942) have employed the basic procedure. In some instances modifications have been suggested or used which allow more accurate quantification of the information so that comparisons may be more accurately made between persons in the group.

A major drawback of the sociometric procedure is that it does not provide ready information about the reasons for the choices that are made by the members of the group. Supplementary interviews are necessary in order to obtain these important data. Moreover, the nature of the sociometric question makes the technique somewhat difficult to employ with adults. Finally, it is never possible to say that choices in one type of situation or activity will have any generality for another situation. Nevertheless, sociometry can make and has already made important contributions to our understanding of the individual's status in a group. It is one way of investigating interpersonal relations and the composition of all kinds of social groups.

Rating Scales. A rating scale is a formalized device for making evaluations of people. Evaluating people is an old and popular custom performed, to some extent, in everyday life by all of us. It is particularly important for those who are responsible for making decisions about hiring, firing, and promoting people. However, the usual descriptive statements by interviewers, observers, and acquaintances are difficult to compare. Rating scales allow us to translate our impressions of people into quantitative terms.

Generally, rating scales consist of lists of traits. Judges are asked to specify to what extent each of these traits is characteristic of a particular person. By correlating the ratings of different judges, rating the individual under a variety of circumstances, and making comparisons with ratings of other people, we can cope with such measurement problems as the reliability of judgments, the consistency of behavior, the question of sampling, and the need for normative data for different types of situations.

Despite precautions, all techniques of rating are apt to involve considerable error. Among the most frequent of the systematic errors in rating people is the "halo effect." This is said to occur when the rater develops a general

opinion of the subject (often implemented by specific items in the scale) and is influenced by this over-all judgment in rating any of the particular items of the scale. For example, supposing one of the early items concerns the subject's honesty and, after some thought, the rater decides that the subject is a pretty untrustworthy fellow. When the time comes for him to rate the subject on intelligence, he is apt to give him a lower evaluation than he deserves because of this earlier unfavorable impression. Of course, the halo effect may also be in the other direction. A student who has a likable personality may be judged better in academic ability than he might otherwise have been.

Another persistent type of error in rating is the tendency to give the subject the benefit of any doubt. This has been called the "generosity error." When a judge is not sure, he is likely to prefer to speak favorably about the person he is evaluating. Training in rating may be of some help in reducing these sources of error.

We may state a few rules about the handling of rating scales that have developed with experience. These rules are designed to minimize all kinds of errors in rating. In the first place, a judge should be asked to rate only a limited number of characteristics, say about five or six, since additional traits may be given less serious consideration as the list grows. Second, the judge should be able to specify on which of the traits he is competent or not competent to make a rating. Judgment is apt to be better and reliability higher on those characteristics on which a judge is competent or on those which he believes are important (Conrad, 1932). Third, a scale should be used rather than a simple yes-or-no choice. Generally, the scale should not have too many gradations; otherwise reliability may be reduced. A five-to-seven-point scale seems to be desirable in most instances. Fourth, the traits must be clearly defined. If they are ambiguous, they are apt to have different meanings for different judges and therefore lead to unreliability. This problem of the interpretation of the trait by different judges exists even in well-designed scales More complete discussions of problems in rating techniques may be found in most texts on testing and in a chapter by Jones (1944).

Standardized rating scales have not been nearly so popular as the standardized personality inventories. One of the reasons for this is that it is not too difficult to construct a rating scale to meet the needs of a particular situation. Moreover, relatively few of the standardized scales have much in the way of normative data to recommend their frequent purchase. Homemade rating scales have been used with great frequency in psychological work. There are a few rather well-known scales, however, which have been of considerable usefulness to clinicians with preschool and school children. Perhaps the best known are the Haggerty-Olson-Wickman Behavior Rating Schedules (1930) and the Vineland Social Maturity Scale (Doll, 1936, 1940).

The Haggerty-Olson-Wickman Behavior Rating Schedules are used to

record opinions concerning the behavior and adjustment of children from nursery school through the high-school levels. There are two schedules: (*A*) A behavior-problem record which lists 15 kinds of problems such as speech difficulties, disciplinary problems, etc.; each of these must be rated from 1 to 4, depending upon the frequency of occurrence in a child. (*B*) A graphic scale (permitting the rater to place check marks at any position along the scale or continuum of the trait) containing 35 traits classified into

FIG 8. Some items for the Haggerty-Olson-Wickman behavior rating schedules. (From Haggerty, M. E., Olson, W. C., and Wickman, E. R. *Haggerty-Olson-Wickman behavior rating schedules.* Yonkers, N. Y.: World Book Company, 1930. By permission of the American Council on Education.)

intellectual, physical, emotional, and social; these are scored in terms of 5 points. For example, one of the items deals with shyness or boldness in social relationships. The judge is asked to check whether the child is: "painfully self-conscious; timid, frequently embarrassed; self-conscious on occasions; confident in himself; or bold, insensitive to social feelings" (see Fig. 8). Each item in the scale is weighted in accordance with the frequency of each rating in groups of children who have behavior problems. The lowest value in the item we have illustrated is "self-conscious on occasions" which received a weight of 1. "Bold, insensitive to social feelings," on the other hand, was very often found in problem children and receives a weight of 5.

The Vineland Social Maturity Scale is a rather unique instrument which is patterned after the Stanford-Binet in the sense that it is a kind of age

scale. The test consists of a standardized list of behaviors which are characteristic from infancy to 30 years of age and which allow a comparison of any subject's behavior with an age norm. It measures the degree of maturation in social competence as evidenced by social participation and personal responsibility.

The user of the Vineland Social Maturity Scale usually interviews someone who is thoroughly acquainted with the child and fills out the scale in accordance with the information derived from the informant. A total score is derived which is called the "social age." As with the IQ of the Binet, an SQ or "social quotient" may also be obtained. The items included in the scale relate to self-help, locomotion, communication, occupation, self-direction, and socialization on the part of the person in question. For example, in each of the above categories may be found the following items, respectively:

Self-help: Reaches for nearby objects (birth to one year).
Self-direction: Buys own clothing (age 15 to 18).
Locomotion: Walks about room unattended (age 1 to 2).
Occupation: Helps at little household tasks (age 3 to 4).
Communication: Makes telephone calls (age 10 to 11).
Socialization: Demands personal attention (birth to one year).

At age 10 to 11 the following items may be found:

Writes occasional short letters.
Makes telephone calls.
Does small remunerative work.
Answers ads; purchases by mail.

The Vineland test was actually conceived for use in applying Doll's (1941) social criteria of mental deficiency. It may, however, be used with a normal population as well. The scale appears to correlate about .80 with intelligence tests as one might suspect from examining the items. It is an extremely useful scale clinically, especially with children.

Some of the other better known standardized behavior rating scales are: the Detroit Scale for the Diagnosis of Behavior Problems (Baker and Traphagen, 1935), the Teacher's Rating Scales for Pupil Adjustment (Freeman and Kawin, 1937), the rating scales of the Fels Institute for Child Research (Champney, 1941), and the Read revision (1940) of the Conrad Behavior Inventory for Nursery School Children (1933).

Sign Approach. In addition to time and episode sampling techniques, sociometric procedures and rating scales, the clinical psychologist has evolved a somewhat different, and in some ways more objective, way of abstracting and interpreting information from observations and behavior samples which have already been recorded. The sign approach may be used with test data of any kind or with behavior observations themselves.

Supposing that as a clinician one notices that patients who are diagnosed as conversion hysterics show certain characteristic behaviors in test situa-

tions. They tend to block on emotional material and show indications of general upset through nervous activity like blushing, becoming ill, and so forth. These behaviors may serve as signs of the syndrome called conversion hysteria. Any record of behavior in a natural or test situation may be analyzed for the presence of these or other signs.

Jung (1910, 1918) used this approach in developing the complex indicators for his word-association test. The well-known lie-detector technique makes use of the same approach.

There is a large variety of signs or indices which the clinician has attempted to make use of in evaluating the status of any particular individual. The predictive ability of the signs determines their usefulness to the clinical psychologist. They may be objective in the sense that they involve simple counting of certain kinds of responses to a test. This approach has been used with certain types of responses to the Rorschach Test. Buhler, Lefever, and Buhler (1949) and Monroe (1941, 1944), for example, have attempted to identify indices of maladjustment by a list of unfavorable signs found in Rorschach records.

The signs may also be subjective in the sense that they depend upon the alertness and impression of the clinician rather than upon any quantitative criteria In the event that the clinician's impressions form the basis for the sign score, evidence of the reliability and validity of the judgments must be obtained. Clinical psychologists often claim that they cannot verbalize or identify the cues by which they make certain judgments about patients. Validity experiments with the use of ratings of this kind based on unverbalized signs are necessary before credence can be given to such claims. If these clinical impressions prove valid, the next step would be to try to identify which cues are really being employed. There is no doubt that many unverbalized judgments are made about patients which may serve as the basis for predictions about later behavior. It is probable that some clinicians are more adept at this kind of subjective or intuitive evaluation then are others. This is a problem which needs a great deal of study.

Somewhat analogous to the technique discussed above is a kind of sign approach which has been used to study the degree of psychological tension exhibited by any written composition or oral communication.

An index of psychological tension developed by Dollard and Mowrer (1947) and called the Discomfort-Relief Quotient may be applied to such recorded material as TAT records, autobiographies, and interviews. A somewhat similar technique has been devised by Raimy (1948), who was concerned with objectively analyzing the course of nondirective therapy. He attempted a measure of what he called the "self-concept."

Raimy believed that the number of positive self-references (flattering or desirable statements about oneself such as "I am popular socially" or "I am brighter than most of my fellow students") and the number of negative self-

references (disparaging statements about oneself such as "I always make a stupid mess out of everything I do," etc.) made during therapy might be an accurate index of the course of the treatment. In a doctoral dissertation he studied these self-references and noted that in successful treatments the positive statements progressively increased and the negative ones decreased. On the other hand, in unsuccessful therapies the preponderance of negative statements continued during the entire course of the contacts.

The importance of this work lies in the fact that it represents a beginning in the objective analysis of therapeutic interviews and other similar material. Such measures as the DRQ and the self-concept must be carefully defined at the outset in order to be useful. Basically they are another form of episode sampling which may be applied to different kinds of observational material. There is some question about what they really mean since they place such emphasis upon the spoken or written words of people. They are, however, potentially useful and represent interesting examples of what might be done to quantify and objectify the interpretation of some kinds of clinical material.

Examples of Test Situations. We have considered the kinds of situations in which observations about personality characteristics may be made, the problems of measurement, and some of the basic techniques for solving observation and measurement problems. A little attention should also be given to a few of the specific investigations which have made use of especially designed situations in order to study certain kinds of behavior. A detailed account of the best known situation tests may be found in Maller (1944). In this section we shall discuss only two rather well-known and interesting examples of situation tests, the Hartshorne and May studies of character and the stress studies of the OSS during the Second World War.

The reader should recognize, however, that there are actually a large number of studies in which a wide variety of personality variables have been studied in experimental test situations. Such characteristics as *suggestibility* (Binet, 1900; Brown, 1916; Avelling and Hargreaves, 1921; Otis, 1924; Hull, 1929; and White, 1931), *perseveration* (Lankes, 1915; Travis, 1926; Pinard, 1932; Stephenson, 1935; Cattell, 1935; Spearman, 1938; Biesheuvel, 1938; Rethlingshafer, 1942; Cattell, 1946; and Machovec, 1948). *persistence* (Morgan and Hull, 1920; Cushing, 1929; Decroly and Wauthier, 1929; Howells, 1933; Crutcher, 1934; Clark, 1935; Thornton, 1939; and Rethlingshafer, 1940), and *reactions to stress* (for bibliography see Lazarus, Deese, and Osler, 1951) have been observed and measured. Techniques for the measurement of such variables as *recklessness* (Burtt and Frey, 1934), *resourcefulness and judgment* (O'Rourke, 1929), *introversion-extroversion* (Travis, 1926), *self-assertion* (Hoffman, 1924), *reaction to success and failure* (Hausmann, 1933), *self-confidence* (Trow, 1923), *deception* (Runkel, 1936), *self-deception* (Frenkel-Brunswik, 1939), *boastfulness* (Raubenheimer, 1925), *direction of aggression* (Rosenzweig, 1935), and *aggressive-*

ness (Gilliland, 1926) have been introduced. This list, which is not complete, illustrates the large variety of personality variables which have interested psychologists in the application of situation tests.

There is often considerable doubt concerning the true meaning of the names which are given to these various behavior samples. Whether persistence is really persistence (whatever the term connotes) or some physiological ability to withstand pain or frustration is not clear. Some effort to understand the real nature of some of these measures has been made along the lines of correlational and factorial procedures. While the number of such situation tests is great, their usefulness depends largely upon their practical forecasting power, that is, how well they are correlated with some variable which we should like to be able to predict. The vast array of situations which we have listed here attests to the desire of psychologists to measure behavior which has been given a variety of names. Unfortunately, they have often been too little concerned with what such behavior in the test situations really means.

Hartshorne and May Studies. One of the earlier and best known of the studies using situation tests was the Character Education Inquiry conducted by Hartshorne, May, Maller, and Shuttleworth published over the years 1928, 1929, and 1930. Natural types of situations in the classroom or playground were manipulated without suspicion on the part of the children participating. The situations included series of tests of honesty, cooperation, and self-control. Some of the tests in the study were extremely ingenious. For example, for honesty, the authors administered school tests and allowed the subjects to score their own papers by means of a key. Cheating could be detected by having the papers scored in secret, by the use of wax impressions of the original answers before the subjects had a chance to change them, or by having an alternate test which was scored by the teacher so that the discrepancies could be noted.

In this manner cheating, stealing, and lying among school schildren were studied. A series of tests was also devised to study cooperation. The subjects were given choices between working for personal or group rewards. They had to decide whether to allot prize money to the student with the best performance, to the playroom, some philanthropy, or whether to contribute things to poor or sick children.

To study self-control, inhibition and persistence tests were employed. In the former case, each child was given a small box of candy and told not to touch it until after finishing an arithmetic test. In addition, situations were used in which the effects of distractions were measured. Pictures and puzzles were interspersed between the various addition problems the children were told to work. Decrease in speed on the addition problems was considered to indicate the degree to which a child's inhibitory tendencies were strong or weak. In the persistence tests the children were given a number of monotonous

or difficult tasks like solving puzzles, counting letters, adding figures, and so on. The rate of work in terms of the amount accomplished during a period of an hour was taken as a measure of persistence. Other similar types of measures in working on difficult and boring tasks were devised.

Hartshorne and his colleagues were highly concerned with the correlations of a child's performance in one situation with his performance in others. They asked the questions: "Are children who are honest in one situation likely to be honest in another?" and "Are children who are honest likely to have strong inhibitory tendencies?" etc. All the obtained correlations were positive but not high. They averaged .24. The correlations of behavior within a category like honesty were higher than between categories. Factor analysis of these results has suggested some evidence for a common factor in all four kinds of situations (Maller, 1934). This common factor, however, is rather negligible in importance. It was also unrelated to intelligence. Maller identified this factor as the readiness to forgo an immediate goal for the sake of a remote but more valuable goal. It will be recalled that this factor is like the reality principle of Freud which appears to develop with age. Rosenzweig (1944) has spoken of this kind of behavior as "frustration tolerance."

To many the low intercorrelations between the tests of the Character Education Inquiry were disappointing and were interpreted as a sign of lack of consistency in human behavior We believe that the use of this series of studies to indicate general consistency or lack of it in personality is valueless. If only the responses or outward behavior of people are important, then we might be duly troubled by such a finding However, any motivational theory has no difficulty dealing with these data. There is no reason to expect high consistency in the ways the individual acts. The consistency must be in terms of what he desires and in the mechanisms (genotypical) by which he achieves his goals. Allport (1937) has further argued in criticism of the studies that the use of children whose sense of honesty, cooperation, and self-control is hardly well developed was a bad choice to test the notion of behavior consistency. Of course, adults could not have been fooled so easily or tested in this type of situation. Moreover, though low, the correlations do indicate at least a certain amount of consistency in the responses of children. For the behavior to be understood, the actual motivations and implications of the CEI situations must be carefully analyzed. The Hartshorne *et al.* studies of character have been less important in terms of developing new personality tests (although their techniques were clever and useful) than in terms of stimulating a great deal of discussion about consistency in personality. The study is an interesting example of the use of strictly objective and qualitative measures of behavior in a test situation.

The OSS Studies. While the evaluation studies conducted by the Office of Strategic Services (1948) [1] have never been considered successful, they

[1] *Assessment of men.* OSS Assessment Staff. New York· Rinehart, 1948.

represent an interesting variety of situation tests in which the technique of behavior ratings by trained judges played a dominant role. The OSS studies were performed with adults with the specific purpose of predicting leadership, initiative, reaction to authority, cooperation, and other variables which might combine to produce effective espionage performance. Again, as with the Character Education Inquiry, the procedures of the OSS staff were highly ingenious. The men involved were selected from all kinds of military services and civilian jobs—some of them generals, some privates, some businessmen, but all appearing in fatigue clothes without any sign of rank. The evaluation lasted 3 days with the men being tested in small groups. The measures were based upon tests of capacity, continuous observation by the OSS staff of psychologists, interviews, discussions in group, and situation tests. At the end of the period each man was given a total rating by the staff.

In one of the situation tests the subject was given 12 minutes to produce a "cover story" to explain being caught in a government office at 9 P.M looking over secret papers. During the test he was grilled by the staff in much the same way as if he were a spy, caught in the act of espionage by the enemy. Attempts of all kinds were made to break down his story or to uncover inconsistencies, even to the point of tricking the candidate by finally assuring him that the test was all over and he could chat with the staff about the experience.

In some tests the subject had to work with other men in difficult tasks from which estimates were made of his speed, practical intelligence, leadership, cooperativeness, stamina, etc. For example, in the brook test a delicate range finder (in the form of a log) and a box of percussion caps (a rock) had to be transported rapidly across a brook. The problem for the group of candidates was to make the transfer safely by impromptu methods.

Perhaps one of the most interesting and amusing of the situation tests involved putting up a wooden structure using assistants who, without the subject's knowing it, were really OSS psychologists whose job was to heckle him, spoil his work, and observe his reactions to this bitterly frustrating situation. The OSS report (1948, p. 105) [1] describes a typical dialogue that might be held between the candidate and two assistants, Kippy (a negative and lazy fellow) and Buster (an eager beaver who is also a constant source of annoyance). The humorousness of the situation makes it worth reporting here:

CANDIDATE: Well, let's get going.
BUSTER: What is it you want done, exactly? What do I do first?
CANDIDATE: Well, first put some corners together—let's see, make eight of these corners and be sure you pin them like this one.
BUSTER: You mean we both make eight corners or just one of us?
CANDIDATE: You each make four of these, and hurry.

[1] *Ibid.*

KIPPY: Whacha in, the Navy? You look like one of them curly-headed Navy boys all the girls are after.

CANDIDATE: Er, no, I'm not in anything.

KIPPY: Just a draft dodger, eh?

CANDIDATE: Let's have less talk and more work. You build a square over here and you build one over there.

KIPPY: Who are you talking to—him or me? Why don't you give us a number or something—call one of us number one and the other number two?

CANDIDATE: I'm sorry. What's your name?

BUSTER: Mine's Buster and his is Kippy. What's yours?

CANDIDATE: You can call me Slim.

BUSTER: Not with that shining head of yours. What do they call you, Baldy or Curly? Did you ever think of wearing a toupee?

SLIM: Come on, get to work.

KIPPY: He's sensitive about being bald.

SLIM: Just let's get this thing finished. We haven't much more time. Hey, there, you, be careful. You knocked that pole out deliberately.

KIPPY: Who, me? Now listen to me, you ——, if this —— thing had been built right from the beginning, the poles wouldn't come out. For ——, they send a boy out to do a man's job.

The object of this impertinence might be a general in fatigue clothes with instructions to build a wooden structure with the help of two men, believing he is about to be evaluated on how well he is able to make use of the assistants to do the constructing.

The measurement techniques used by the OSS were very costly in time and personnel. All the difficult problems associated with behavior ratings, that is, reliability, validity, sampling, etc., were serious technical obstacles to the success of the program. Even if the reliability of the judgments were high, one might wonder whether these tests had any predictive power. What was really being measured by the tests and ratings? In the group-discussion situations, were the staff rating practical intelligence as they believed, or were they really evaluating a man's political beliefs in terms of their own opinions? These questions cannot be answered without adequate validity studies which would involve relating the judgments about a man's worth to his actual performance in a criterion situation. In the case of the OSS studies, this criterion would have to be effectiveness in the war zone.

Attempts were actually made by the OSS to validate their evaluation procedures. However, it was virtually impossible to employ a suitable criterion. The candidates could not be compared legitimately because they were assigned to different theaters of war and performed different duties under a variety of superior officers.

It is clear that the use of such situations as the OSS tests (the first really systematic attempt to do this kind of thing) offers great difficulties. We believe that, while this attempt did not result in a high degree of success, it made a definite contribution to the field of personality evaluation. With improvement of the validating procedures and further experimentation with a variety of other situations which might allow a more objective evaluation of each of the men under study, this type of approach could prove most effective. There is agreement that situation tests in general offer an excellent, possibly the best, opportunity to study human behavior and personality. The majority of disagreements occur over the question, "What behaviors or characteristics should we measure?" The chief difficulty lies in finding or making use of suitable criteria against which to check the validity of the psychological evaluations.

SELF-REPORT TECHNIQUES

In an effort to be objective and avoid the obvious pitfalls of behavior studies, many psychologists took up the use of the self-report tests. There are apparently a number of psychologists who still believe it is possible to translate human personality into a simple test score or a series of scores even though they are based on what the person is willing to say about himself. The self-report tests of personality, interest, and attitude have, indeed, a certain amount of usefulness although they are by no means as important to measurement as they were thought to be earlier in their history.

Personality. Basically, the pencil-and-paper personality tests are a kind of standardized interview. Whether the intention of the psychologist is to measure attitudes, interests, or neurotic signs, the questionnaire method provides a list of prepared questions which the individual must respond to, usually with a yes, no, or I don't know answer. There are, of course, many variations of this response theme so that some inventories require crossing out undesirable alternatives or making a choice from a group of possible answers, and so on. In any case an objective score or pattern of scores of some kind is derived which may be interpreted by the examiner in accordance with certain norms.

The Woodworth Personal Data Sheet (1918) appears to be the grandfather of the modern personality questionnaire. Its items were based upon the symptoms reported by psychoneurotic patients. It has formed the pattern for a great many later psychoneurotic inventories. The Personal Data Sheet was devised during the First World War for the purpose of selecting emotionally stable recruits. Such a technique was sought because complete psychiatric screening by interview was costly and considered impractical. The inventory consisted of 200 neurotic symptoms, the score being the number of items which were answered yes.

The technique became so popular that following the war dozens of instruments patterned after the Woodworth test appeared. Many of these tests were assumed to measure one particular aspect or trait of personality such as neurotic tendency, introversion-extroversion, dominance-submission, home adjustment, feelings of inferiority or self-esteem, and a large group of other characteristics. Freeman (1950) points out that there are probably around 500 or so personality tests and inventories. The largest number of these duplicate each other and vary greatly in the amount of research performed with them on questions of reliability, validity, and standardization.

Advantages and Disadvantages. The stubborn hold that these pencil-and-paper tests have had on American clinical psychologists has not occurred by chance. The personality inventory has three major virtues which account for its popularity; these are economy, simplicity, and objectivity.

The questionnaire arose because it seemed possible through this technique to interview a large number of potential soldiers at one time (Woodworth Personal Data Sheet). Since it consists of a series of printed questions which the testee answers by underlining, circling, or checking, in some way, the desired answer, the test may be administered rapidly to an almost unlimited number of people at once. It is therefore inexpensive with respect to administration. Moreover, its objective character allows it to be scored by machine or at least with a minimum of effort and expense.

Because scoring and administration are extremely simple and the inventory provides a single score or profile of scores which is easily interpreted, almost anyone can presumably use the test. There need be very little training for the tester, while interviewing requires a great deal of skill. Moreover, since the tests generally yield a simple score on some trait like introversion-extroversion or social adjustment, people who are not trained psychologically are willing to use such tests freely. This, of course, accounts partly for the widespread use of these tests but represents one of the most unfortunate aspects of the questionnaire. There is serious doubt, in most cases, that the simple interpretation usually recommended by the test constructor has much validity. The apparent simplicity and availability of the pencil-and-paper test have led to extensive misuse by untrained people who believe they are making appropriate and sophisticated interpretations. Such misuse can be very harmful socially and professionally.

The objectivity of the inventory has also been a major inducement for psychologists who have been unhappy with the problems of the more subjective approaches to personality measurement. Since the test requires a simple objective answer, it may be scored with a minimum of observer error and bias. There is no need to obtain elaborate information about observer agreement, since it must, of necessity, be nearly perfect. Moreover, since it is so economical in time, it is possible to sample a wide variety of areas. The subject may be asked about his health, home, attitudes, anxieties, ag-

gressions, etc., all in the same inventory. Consistency of responses to the test is usually high but probably in a spurious way because of the subject's memory for his answers and his desire to be consistent in his replies. But primarily, it is so easy to give that it becomes practical to obtain a large normative sample against which to compare any person's record. The precise control over the techniques of administration provides an almost perfectly standardized interview situation. One person's answers may be readily compared with another's because they are both responding to the same questions. It is possible to obtain a tremendous amount of information concerning how various diagnostic classes of patients, as well as normals, deal with the material.

Many clinical psychologists today believe that the disadvantages of the personality inventory far outweigh the advantages just outlined. Most of the disadvantages are really related to the problem of validity. There is great doubt that most, or any, inventories really measure what to a sufficient degree they are supposed to measure. Let us consider some of the main limitations which affect the validity of personality questionnaires.

The results or scores of the personality inventory are intended to represent certain characteristics of the individual. They tend to be behavioral in nature, and one of the chief criticisms that have been leveled at the pencil-and-paper tests is that they provide no understanding of the basis or motivation for the behavior. They simply provide a statement about the presence of certain behavioral trends. If our intention is to understand a particular patient, these scores would be of relatively little value, even if they were valid measures of behavior. Two people may obtain the same score on the test for entirely different reasons. The total scores may result from a vastly different pattern of answers. For example, on a particular test, subject one may answer yes to items 2, 4, 6, 8, and 10, while subject two may check items 1, 3, 5, 7, and 9. Both people have the exact same score, 5, but they are different in very important ways. The use of such a score tends to obscure the important patterning of answers.

There are a whole series of limitations to the personality inventory which revolve around the way the tests are set up from the point of view of the responder. Each of these tends to greatly reduce the validity of the questionnaire technique. We shall list each of these because their effect on the test results is important.

1. *Transparency of meaning of the questions.* It is usually easy for the subject to recognize what the examiner is getting at because of the way the test questions are worded. It is generally clear to the subject which answers are "good" and which are "bad." He can therefore produce at will nearly any kind of personality picture, depending upon how he is motivated. If he should be motivated to create a favorable picture of himself (a job applicant, etc.), the score will be affected accordingly. Moreover, sometimes he may

desire to look sick, as in the case of malingering inductees in the military service. Kelly, Miles, and Terman (1936) have shown that answers to the inventories may be faked at will by the subject.

2. *Dependency upon the subject's knowledge of himself.* It must be clear that if the person taking the test has an inaccurate notion of what he is like, or how he acts in various situations, the results will hardly approximate a true measure of his personality. Actual behavior may fail to resemble at all the subject's description of himself.

3. *Forced-choice type of response.* In many or most of the inventories the subject must answer with a yes, no, or ?, or has to pick an answer from a group of fixed alternatives. Since there are no opportunities for qualification or elaboration, much information is either lost or distorted. Subjects may easily become annoyed or confused by such a situation. As a matter of fact, Spencer (1938) has demonstrated that the very act of having to answer personal questions is itself annoying to many people.

4. *Literacy requirement.* While academic psychologists who deal primarily with college students do not often think of this as a problem in personality-inventory use, there are a fair number of situations where subjects cannot properly complete an inventory because they do not understand the words. This was particularly apparent in the military service. The most dangerous case is the subject who is literate enough to escape detection but who becomes confused by the items. One of the authors had the experience during the war of having questions like, "Have you ever been in a mental hospital?" (on the Cornell Selectee Index) misinterpreted to mean, "Have you ever been in a hospital?" This was only discovered when samples of the subjects were interviewed, and it was found that some of the men had answered yes because of broken bones or shrapnel wounds. Before this discovery the psychologists concerned had been astounded at the number of men who had been in mental institutions. Confusion about words of ambiguous meaning or with words which have technical implications was most frequent. For example, bed-wetting was often interpreted as having wet dreams (nocturnal emissions) rather than as urination during sleep.

As we have pointed out before, certain terms like ascendance, neurotic tendency, extroversion, anxiety, etc., have been given to the patterns of score which are derived from personality inventories. What these terms really signify and what the response pattern really indicates is not an easy question to answer. The subtests of the Bernreuter Personality Inventory (1931–1933), for example, have each been given different names like Neurotic Tendency, Self-Sufficiency, Introversion, and Dominance. Many of the items had been culled from previous tests like Thurstone's Personality Schedule (1930) and Allport's Ascendance-Submission Reaction Study (1928). The intercorrelations between the subtests, in spite of the different names, indicated that the four tests were actually measuring only two different variables (Flanagan,

1935). The names which were applied to each of the scales were therefore of questionable meaning. Only recently have there been attempts to attack this problem on a large scale and to devise tests on the basis of intercorrelational analyses of the subjects' responses.

In the most practical sense the validity of any test depends upon its ability to predict something about behavior effectively. If these tests actually did allow us to make reasonable predictions, regardless of their theoretical inconsistencies, they would be worth our time and energy. While there are many specific techniques with which we may study the validity of such tests, all of them involve some form of correlation of the test scores with a criterion. That criterion may be presence in a mental hospital, some sort of rated or objective behavior, clinical diagnosis, other test scores, and so on. Each of these criteria offers certain special advantages or limitations. For example, one of the weakest criteria is the use of other tests. If the instrument in question correlates with another test of equally questionable validity, we can say only that both tests measure similar things, even if we do not know what they are. The selection of the criteria themselves is of crucial importance in studying the validity of any test.

When the personality inventory is used as a quantitative predictive device, that is, the score is expected to enable us to predict whether a person is neurotic or normal, outgoing, submissive, suggestible, and so forth, studies of validity have produced extremely forlorn results. In general, one finds complete disagreement and contradiction in the literature. The most extensive reviews of the validity studies of personality inventories have been performed by Ellis (1946, 1947). An example of the type of information provided by these reviews may be seen in an analysis of the validation studies of four widely used group tests (the Bell, Bernreuter, Thurstone Schedule, and the Woodworth Personal Data Sheet). Of the studies located by Ellis, 25 gave positive results (correlation below .70), 11 gave questionable positive results (correlation between .40 and .70), and 44 gave negative results (correlation below .40). Validity appeared to be higher when the tests were individually administered. But in general, the over-all picture was certainly neither encouraging nor clear. In some ways Ellis was rather harsh in his appraisal of the personality-questionnaire field. Somewhat better results appear to have developed out of the validity studies with military personnel during the Second World War. These studies have also been reviewed and criticized by Ellis and Conrad (1948).

It should be pointed out that one of the uses of the questionnaire which we have not yet mentioned has little to do with the usual notions of validity that were studied in the Ellis reviews. Clinicians have found that inventories are often valuable as starting points for interviews or as ice-breakers in cases where conversation is initially difficult. By letting the person begin by

answering the questions and later asking him to develop his answers more fully, useful information may be obtained rapidly. If, for example, the person answers yes to the question, "Have you worried a great deal about something in particular?" the interviewer may profitably ask the individual to tell him some more about that point.

Because the personality questionnaire is so inexpensive as a measuring device, it has also received wide play as a means of rapid psychiatric screening of large numbers of individuals. The personality inventory is better suited to this kind of use than as a measure of personality. It was particularly popular in the armed forces during the Second World War, and although the available tools were subject to large error, they frequently served some useful function. This type of approach may offer some promise for future selection as well.

Since there was such a limited number of psychological and psychiatric personnel available to military installations, some inexpensive device was needed to select out of the millions of men in the armed forces those who needed individual attention. A test with relatively low validity will select a large number of false positives (men who show abnormal scores but who are not ill) and miss a certain percentage of individuals who should be picked up. But when such large numbers of people are involved, considerable error can be tolerated. It is often more economical to proceed in this way than to have to examine every person in the group The screening tests were attempts at finding some fairly accurate way of selecting the men who were most seriously ill so that they could be given attention rather than waste professional time on the many who did not require it. Any military, social, or economic situation in which relatively large numbers of personnel are involved could profit from the screening principle, provided that screening devices are designed which have sufficient validity to be useful.

Many clinicians scorn the use of the inventory for any other purpose than for supplementing and assisting the interview. Psychologists are still struggling with the challenge of developing valid group testing, particularly for personnel selection in the military and industrial situation. It is in these instances that the advantage of economy which is the personality questionnaire's greatest asset makes the largest potential contribution. The questionnaire may yet be improved sufficiently for more efficient use as a quantitative clinical tool. Even the misrepresentation of information by the subject may be profitably studied by the psychologist and, by ingenious techniques, evaluated or counteracted. Psychology has a great deal to gain from the establishment of valid personality inventories which overcome some of the limitations produced by their present tendency toward superficiality and the difficulty of their interpretation. We do not think this is an unsolvable task although, as yet, the surface has only been scratched. Any technique for

studying what a person does by studying what he says about his behavior presents a really difficult problem. There will probably always be this limitation to the self-report techniques.

Examples of Personality Questionnaires. There is certainly no point in trying to illustrate the 500 or so tests in this area or even to identify all the classes of self-report techniques which have been devised over the past 35 years. Some of these tests have been more popular than others, and often the reason for this is rather obscure. We have selected a few of these because they are either well known or illustrate some special features which distinguish them from the general run-of-the-mine inventories.

The Allport A-S Reaction Study (1928), one of the earliest inventories, was devised for use with college students to measure ascendance (or dominance) and submission (being dominated) tendencies. A variety of everyday situations are verbally described with several possible answers which illustrate what a person might do. For example, "If a student in a class discussion makes a statement that you think erroneous, do you question it? Usually, occasionally, never." The subject must select one of these alternatives which he believes characterizes his behavior in such situations.

In attempting to study the correspondence between what a person says in this sort of test and what he does, Allport (1942) has found that ratings are likely to be more introverted and emotional than would be indicated by objective records. The A-S Study is a good example of a pencil-and-paper test on which it is important to know the effect of constant errors of this sort as well as the effects of various kinds of motivations. Little information is available along these lines for any of the inventories of this type. Allport has been laudably conservative in his evaluation of the usefulness of his scale, suggesting that it be used for research on personality measurement rather than as a rigid test of ascendance-submission. However, Beckman (1933) has revised the scale and believes that it is useful and valid in personnel selection.

The Bell Adjustment Inventory (1934) is an exceedingly popular test which contains a number of questions designed to yield an evaluation of a person's home adjustment (satisfaction with home life), health adjustment (extent of illness), social adjustment (ascendance-submission), emotional adjustment (degree of nervousness, depression, reactivity), and occupational adjustment (satisfaction with job conditions and associates). There is one form for students (grade 9 through college) and one form for adults. All the questions must be answered yes, no, or ?. There has been much criticism of the inventory on the grounds that the separate areas do not represent separate and distinct aspects of adjustment. While the test has not shown any dramatic validities, it is extremely simple to administer and has found rather frequent use in the clinic. It is most often found in vocational guidance centers.

The Bernreuter Personality Inventory (1931, 1933) appears to be better known than any other test of its type although, except for its simplicity, it has little more to offer than the other questionnaires. Its construction was based on earlier tests, and it has been quite extensively studied with unspectacular results. Along with the Bell it has just about all the shortcomings of this class of instruments. As we have mentioned before, the test was designed to give a measure of four personality traits: neurotic tendency, self-sufficiency, introversion-extroversion, and dominance-submission. The response side of the inventory is exactly like the Bell and must be answered with a yes, no, or ? to each item. In factor analyzing the responses to the test, Flanagan (1935) has suggested that all four scores could be accounted for by two variables which he called confidence and sociability. Therefore, much energy is wasted in scoring all four of the scales. Moreover, there is little justification for the particular names given to each one. More recently, other factorial studies have been done with the Flanagan sociability scale (Brogden and Thomas, 1943). Despite all the effort that has been spent on the Bernreuter, contradictory claims about it seem to be the rule (see Super, 1942, and Ellis, 1946). Its simplicity still charms many uncritical clinical psychologists.

As a consequence of some factor-analysis studies, a series of inventories was developed by Guilford and Martin for the purpose of measuring relatively pure factors of personality. The *Guilford Inventory of Factors STDCR* (1939) provided measures which were called social introversion, thinking introversion, depression, cycloid tendency, and rhathmyia (carefree disposition). In another complementary test, Guilford and Martin have introduced the following names for the components of the *Inventory of Factors GAMIN* (1943): general activity, ascendance, masculinity, inferiority feelings, and nervousness. The test has more often been used in personality research than as a clinical tool. Whatever its usefulness, however, its contribution lies in the fact that the construction of the test was based on competent factor-analysis research.

In recent years clinical psychologists have become interested in a relatively complex inventory, the *Minnesota Multiphasic Personality Inventory* (Hathaway and McKinley, 1940). It has a number of innovations which promise to develop into excellent techniques for overcoming some of the traditional disadvantages of pencil-and-paper tests. The evidence for its validity seems to be more encouraging than with most of the other tests. The inventory consists of 550 statements suitable for group or individual testing which the individual must answer with true, false, or cannot say. The items in the test have been grouped into nine scales corresponding to standard psychiatric classifications: hypochondriasis (*Hs*), depression (*D*), hysteria (*Hy*), psychopathic deviate (*Pd*), masculinity-femininity (*Mf*), paranoia (*Pa*), psychasthenia (*Pt*), schizophrenia (*Sc*), and hypomania (*Ma*) (see Fig. 9). The higher a person's score in any particular category, the more do

*Some items contributing toward a score for hypochondriasis**

T There seems to be a fullness in my head or nose most of the time.
T Parts of my body often have feelings like burning, tingling, crawling, or like "going to sleep."
F I have no difficulty in starting or holding my bowel movement.

Some items contributing toward a score of psychasthenia (obsessive-compulsive disorders)

T I usually have to stop and think before I act even in trifling matters.
T I have a habit of counting things that are not important such as bulbs on electric signs, and so forth.
F I have no dread of going into a room by myself where other people have already gathered and are talking.

Some items contributing towards a score for paranoia

T I believe I am being followed.
F Most people inwardly dislike putting themselves out to help other people.
F I have no enemies who really wish to harm me.

* Items labeled T and F are those which, when answered true or false respectively, contribute to a positive score in a particular diagnostic category.

Fig. 9 Examples of items on the Minnesota Multiphasic Personality Inventory. (From Hathaway and McKinley. *The Minnesota multiphasic personality inventory.* New York: Psychological Corporation, 1943. By permission of University of Minnesota.)

his answers resemble those given by that type of patient. A standard score greater than 70 on any scale suggests abnormality with respect to the type of behavior measured.

While many features about the scale are not unusual, it is a great deal more comprehensive than most and has the interesting feature of providing an opportunity for differential diagnosis in terms of standard psychiatric categories. Of course, as we have said before, this is in some ways a handicap as well as a virtue. However, the particular feature which is of greatest interest is the additional set of scales in the test which were designed to deal with some of the commonest sources of error in personality inventories. Four additional scales are provided, the *L, K, F,* and ? scales which offer checks on the validity of the subject's answers. By examining the subject's answers to questions which nearly everyone tends to answer positively (there are 15 items which, if answered in the opposite direction from the usual, place the person in what he believes is a favorable light), it is possible to have a rough check on the honesty of the subject or to detect certain deviant personality trends which make the rest of the profile untrustworthy. This is the *L* or lie scale.

The ? scale represents the total number of statements which the subject places in the "cannot say" category. Evasiveness in the form of a high question score invalidates the rest of the scale. The authors point out that the effect of this is to push the subject's score toward the mean and away from the deviant levels.

The *F* score represents a check on the validity of the whole record by indicating carelessness on the part of the subject. It consists of a count of answers (out of 64 items which are normally answered in the same way by 90 per cent of normal subjects) given by a subject which are only very rarely given by other people. Unlike the *L* score, the answers may be favorable or unfavorable to the subject's self-esteem. Careless sorting and misunderstandings are screened by this technique. In a sense, a high *F* score indicates that a subject's answers were not rational or pertinent and, therefore, the entire record is suspect.

The *K* scale is somewhat new and is based on the observation that a certain number of normal people obtain scores which fall above 70 (abnormal) in the various scales (these people have been called "false positives"). An analysis of the kinds of items which were answered deviantly by these people led to the formation of the *K* scale, which attempts to correct for this. A person who obtains a very low *K* score is apt to have been exceptionally severe in describing himself on the test, either because of excessive frankness or a very powerful sense of conscience. If a person generally gives himself the benefit of the doubt, he is apt to earn a high *K* score.

It should be easy to see that the use of the *L, K, F,* and ? scales on the MMPI offers a real opportunity to reduce some of the basic inadequacies of personality inventories. Some experimental evidence that they work may be found in a study by Gough (1947) who had psychologically trained subjects attempt to fake neurotic and psychotic profiles. Although they succeeded in producing both neurotic and psychotic scores, the *K, F,* and *L* scores were also deviant, indicating that these validity scales do provide useful checks upon the trustworthiness of the subject's answers. These scales are not perfect solutions, but they do represent important advances in the use of the questionnaire. Clinicians have high hopes for this type of inventory. Notice, however, that, in attempting to be thorough and intelligent about their test, the authors of the MMPI have partially sacrificed one of the chief advantages of the questionnaire—speed. The test takes longer to administer properly and to score than most of the other inventories. It is more effective in individual administration than in a group setting It does, however, retain the feature of simple standardization. And the most realistic psychologists have by now begun to realize that there is really no cheap way to learn about the personality of any human being. It really takes a great deal of time to get valid and worth-while information.

A few other personality inventories deserve mention. The ***Thurstone***

Personality Schedule (1930) yields a simple measure of neuroticism. For children from 9 to 13, the *Rogers Adjustment Inventory* (1931) is an interesting test giving estimates of feelings of inferiority, social adjustment, family adjustment, daydreaming, and total adjustment. The clinical study of the responses of the children may be considered more fruitful than the use of the quantitative scores.

The *Allport-Vernon Study of Values* appeared in 1931 and still may be found quite often in personality research. The test is based on Spranger's (1928) types of men. It provides scores for six values: theoretical, economic, aesthetic, social, political, and religious. Some psychologists have labeled it a test of interests. However, it is typically used as a pencil-and-paper personality test.

Another well-known inventory is the *California Test of Personality* (Tiegs, Clark, and Thorpe, 1941) which provides scores of self-adjustment (divided into self-reliance, sense of personal worth, sense of personal freedom, feeling of belonging, withdrawal tendencies, and nervous symptoms) and social adjustment (ethical standards, social skills, antisocial tendencies, family relations, school or occupational relations, and community relations). Scales are provided in five age groups from primary school to adulthood.

The *Humm-Wadsworth Temperament Scale* (1934, 1940) has been something of the forerunner in style of the MMPI. It has been recommended, although with very little evidence of its validity, for industrial and business use by the authors. It provides scores of normal, hysteroid, manic, depressed, autistic, paranoid, and epileptoid temperament types. The authors believe that men of similar profiles should be grouped together in teams to promote harmony. The temperament classification (used by the authors apparently as an equivalent to personality) was based on a discarded theory of Rosanoff (1927).

In the last war, the *Cornell Selectee Index* (Mittelman *et al.,* 1944, short form) had frequent use as a psychiatric screening device. It contains 64 questions most of which pertain to psychosomatic complaints. The index was designed primarily for use in induction and reception centers as well as during hospitalization. Other forms of this test, the *Cornell Index* and the *Cornell Word Form,* were used for nonmilitary situations (Mittelman and Brodman, 1946; Weider *et al.*, 1946; Wolff, 1946).

As we have said, it would take tremendous time and space to present a complete account of even the better known personality inventories. It is perhaps not unreasonable to say that they are a drug on the market. Some of them are very similar or nearly identical. Individual psychologists tend to have their own tastes and experiences with one or another of the questionnaires. Since so few of the inventories offer special advantages over the others and because the validities of the great majority of them discourage reliance upon them in an absolute sense, we do not believe any absences from

this list will be missed by the student. We urge the student to consult texts like Cronbach (1949), Freeman (1950), Harsh and Schrickel (1950), the chapter by Maller (1944), and the articles by Ellis (1946, 1947) and Ellis and Conrad (1948) for greater information. Reviews of most of the tests may be found in Buros (1938, 1941, 1949).

Interest. Knowing something about what a person enjoys by way of activities, jobs, etc., is most useful in vocational counseling. Direct questioning such as asking someone, "Would you like to be an accountant?" etc., is rarely an adequate approach because one of the chief problems in vocational guidance is that the counselee usually cannot say what he would like to do for a living. For this reason pencil-and-paper interest tests have been devised which approach the problem somewhat more indirectly. By examining the reactions of the subject to a heterogeneous group of activities, requiring him to indicate the people he admires, and studying his preferences for school subjects, the user of an interest test hopes to find a vocation which will be appropriate for the individual's pattern of likes and dislikes.

The problem of studying the validity of interest tests is not so straightforward as it is with the neurotic inventory since by definition the criterion is the real interest pattern of the individual. Interest tests have been used with some success in predicting academic grades in various types of school programs and job effectiveness (Segel, 1934; Young and Estabrooks, 1937; Strong, 1943; Mosier, 1937; Detchen, 1946; Dunlap, 1940; Ryan and Johnson, 1942; Davis, 1947). Generally, however, vocational advisers have been content with the use of such measures on the grounds that interest patterns and job satisfaction are highly related and have assumed that the tests can really identify legitimate interests.

Naturally, what we said about the subject's answers with regard to the personality questionnaires applies here also. Honesty and insight are necessary for the appropriate use of the interest inventory. Recent biases may affect what the subjects say. For example, a man who has spent several years in the military service may have developed a strong situational dislike for office management or cooking but may have the best chances for happiness in a civilian capacity in that kind of work. If he is tested immediately after separation from the service, a false picture of his interests may be produced.

One of the uses of tests of interest which has gone unrecognized by many psychologists concerns the relationship between what the person likes, that is, his tastes, and various personality characteristics. Interest patterns may provide clues about adjustment and personality dynamics.

For example, the relationship between sex interests and personality has been studied by Terman and Miles (1936). Comparing the interest patterns of both sexes, the authors produced an inventory which is sometimes quite useful in clinical practice. One of the scales of the MMPI also provides

a measure of masculinity-femininity. The items of the scale represent interests which are characteristically masculine or feminine, respectively.

Furthermore, some interests really indicate a tendency to withdraw from social activities and may suggest shyness or inferiority feelings. If effort is given to probing into the reasons for the particular choices made by the person, a great deal of significant information may be derived about the individual's personality dynamics. Darley (1941) has been a strong advocate of the clinical study of interest patterns. There can be no doubt that they are an important aspect of personality.

The earliest test of vocational interest appears to have been the Carnegie Interest Inventory introduced by Freyd (1922). Since then, and paralleling the development of personality questionnaires, there have been developed a large number of interest tests. Some of the better known of these are: the Brainard Occupational Preference Inventory (1945), the Lee-Thorpe Occupational Interest Inventory (1944–1946), and the Pressey Interest Attitude Tests (1933). By far the most popular, and in many ways the most useful, are the Strong Vocational Interest Blank (1927, 1935, 1938, 1943) and the Kuder Preference Record (1939, 1942). The latter two are frequently used to supplement each other. In many vocational guidance centers they are both routinely given to all counselees.

Attitude. Attitudes toward social institutions, people, racial groups, and political movements and candidates have been important subjects of investigation for psychologists of all kinds. Research along these lines has been primarily the interest of social psychologists. However, not only has the clinical psychologist become concerned in recent years with the personality aspects of attitudes (particularly the study of prejudice), but he has also found occasionally that such measures were of clinical value in understanding the individual. The field of attitude measurement through the use of self-report techniques is a complex one. Our purpose in this presentation is to touch upon some of the high lights in the field so that the student may have some acquaintance with its problems and procedures.

Thurstone (1929, 1931; Thurstone and Chave, 1929) has been primarily responsible for most of the modern techniques of attitude measurement. More recently Likert (1932) has introduced a different measurement technique which has proved equally useful. The great bulk of the attitude scales in use today reflect either the Thurstone or Likert procedures.

Equal-appearing Intervals (Thurstone). As in the case of behavior ratings, the earliest procedures in attitude measurement involved verbal descriptions and judgments. Any effort to quantify these so that they might be compared produced a special difficulty. For example, subject A might obtain a score of 30 on an attitude scale, while subject B gets a score of 40. Subject C, on the other hand, received 70 and subject D, 80. Now, we have no way of knowing without more sophisticated procedures whether the difference in

the scores of A and B (10) is equivalent to the difference between C and D (10). The numbers themselves do not refer to any real amount. Differences between people's score or attitudes, therefore, could not be compared (see Chap. 2).

Thurstone conceived of attitudes as arranged on a continuum from very favorable to very unfavorable toward any object or question. Ideally, an attitude scale would then measure how favorable or unfavorable a particular person's attitude was toward that object or question. A scale designed by Thurstone would consist of about 20 or more statements representing all the possible degrees of opinion. To obtain a value for each item which represents its degree along the continuum, large groups of judges are used. Each judge arranges each item (usually typed on a separate card) in a series of piles (about 11) on the basis of its favorableness or unfavorableness. The judges are asked to try to make their arrangement in such a way that the differences in favorableness between each pile will be equal (hence the term "equal-appearing intervals").

As many arrangements of the cards are made as are necessary (usually by threes, that is, most, least, and in-between favorableness, are selected first, then each of these three piles is subdivided, etc.). In selecting the final items, the median position given to each of the cards by the entire group of judges is calculated. Items which show very large variability are eliminated. These are ambiguous. Then a selection is made so that each of the items in the final scale has a median value that makes it as evenly spaced from the other items as possible.

A continuum will result from this procedure which contains items which are judged to be evenly spaced and which have values which can be compared from one subject to another. In other words, if subject A chooses one item which has the highest median value indicating the most favorable attitude and subject B chooses a different item which is closer to the bottom, it is perfectly appropriate to say approximately how much more sympathetic subject A is than B. The Thurstone technique allows us to make quantitative statements about people's attitudes.

Remmers and Silance (1934) have introduced a slight modification of the Thurstone technique which reduces some of the labor of constructing a scale for each attitude that one desires to measure. Remmers uses a generalized scale, that is, one which may be used "toward any issue," or "toward any institution." Nearly any subject (within certain logical limits) may be inserted into the title of the scale for which equal-appearing intervals have already been devised. Essentially the same results may be obtained with the Remmers scales as with the Thorndike scales. Instead of initially producing items for testing like, "The Irish have contributed a great deal to musical entertainment," Remmers's generalized items are worded like this: "This nationality has contributed a great deal to musical entertainment," and the

experimenter merely has to indicate to the raters which nationality he wishes to have them evaluate.

Likert Technique. The method proposed by Likert has the merit of saving time and labor by eliminating the use of the initial judging group which Thurstone used in selecting items with equal-appearing intervals. The technique is simple. It requires the subjects to express the degree to which they agree or disagree with a series of statements. A five-point scale is generally used ranging in the following fashion: strongly agree, agree, undecided, disagree, and strongly disagree. Arbitrary weightings are given each item, usually from 1 to 5 from one extreme to another. The person's score is simply the sum of the ratings on all the items which refer to some particular issue.

Some disagreement exists among psychologists as to the relative merits of the Thurstone and Likert techniques. The latter takes less time to construct but a little more time to administer and score, since a greater number of items are usually used. The Likert technique also assumes that a rating of 5 indicates as high a degree of agreement as a rating of 1 indicates disagreement. The reliabilities of both methods appear to be high, and there is some evidence that both techniques will produce essentially similiar results (Edwards and Kenney, 1946). None of the experimental comparisons of the two methods have produced entirely adequate conclusions, and the question of the differences between the techniques is still a debated one.

Rundquist and Sletto (1936) in an oft-quoted study showed that the form of the statement influences the tendency of subjects to agree or disagree with it. Since both the Thurstone and Likert techniques involve different kinds of wordings, it is probable that, with some material at least, major differences in results might be obtained. The Likert technique provides no preliminary screening of the items and is therefore more subject to wording errors. Some psychologists like Cronbach (1949) have argued that the Likert technique has greater value diagnostically because each subject responds to every item. In the Thurstone technique the subject must simply check the items with which he most agrees.

Other Procedures. In addition to the equal-appearing interval scale, Thurstone (1927) has used a *paired-comparisons* procedure which has some statistical advantages over the other techniques. It is usually more precise and difficult to falsify successfully. But it is very time-consuming. The subject is confronted with each item in a series which is paired successively with each of the other items. In every comparison the subject must make a choice between the two. At the end of the comparisons, each item is given a standard score. The approach is more suited to group comparisons than to the analysis of individual attitudes.

Many modifications of these rather standard approaches to attitude measurement have been designed, some of which are attempts to get away from the frequent discrepancy between what a person says and what he actually

does or would do. This, it will be remembered, is the problem that plagues all self-report techniques and limits their usefulness. One may attempt to modify the question in such a way that the person thinks more in terms of what he would do rather than in terms of how he feels. In addition, some of the techniques attempt to disguise the real intentions of the psychologist. The projective approaches that we shall discuss in the next chapter are ways of getting at attitudes without making this intent obvious to the subject.

Horowitz (1936) used a neat device which helped eliminate some of the verbal difficulties of attitude measurement. He presented photographs of pleasant white and Negro boys with the instructions to "pick out the one you like best, next best, etc." The subject might also be asked which ones he would wish to sit next to in a streetcar. It is possible to vary this technique in many ways by showing various kinds of social events and requiring expressions of approval or disapproval, comments, etc.

Bogardus (1933) developed a widely known and used technique which obtains information about prejudice by indirection. The technique is known as the *Social Distance Scale*. The subject indicates his attitude toward races or groups by stating what kinds of activities he would accept on the part of the stated group. For example, one subject might heartily approve of a Negro competing occupationally but might strongly disapprove of him intermarrying with someone of his own race. Another person, however, would prefer to have much more severe social barriers for the Negro. In other words, he shows a desire to maintain a much greater social distance from the racial group in question.

The *interview* as a means of evaluating personality and attitudes lies somewhat midway between the behavior study and the self-report technique. We have discussed the interview as a source of information in the chapter on clinical techniques. It is worth mentioning here, however, that the interview is just as much a technique for personality evaluation as any procedure we have discussed in this chapter. The reader will immediately recognize the apparent similarity between the probing of the interview and the questions which are asked in the personality inventory or attitude scale. However, there is an important difference. The interview is decidedly more flexible because the examiner can respond to the subject in terms of what has been said, and may vary his approach or questions to suit the reactions of the subject. If a subject is reluctant to answer certain kinds of questions, the interviewer may defer them until the end or approach them by indirection in order not to prejudice the collecting of other information. Or he may behave as an observer in a behavior-study situation and be constantly on the alert for emotional behavior (such as blushing, blocking, anger, etc.) to certain kinds of material. These kinds of observations allow the examiner to more effectively appraise what is said or what would only appear on the surface in a standardized and impersonal questionnaire or attitude blank.

Recognition of the advantages of the interview type of situation has been indicated by the frequent use of the interview in attitude measurement. Instead of being limited by yes or no or multiple-choice kinds of answers, the examiner is sometimes permitted to let the subject respond with an elaboration of his real feelings and give his opinions in his own words. Psychologists who have used the *open-end interview* have realized that it is difficult to score, since it must be subjectively interpreted, but it allows the interviewer to "read between the lines" of what the subject is saying and obtain a more accurate picture of the underlying attitudes.

For example, the subject may have responded to a question about racial problems to the effect that he thinks Negroes are just as good as any other racial group and should have equal consideration. But when he is given an opportunity to elaborate, he makes it clear that this statement is really a kind of cliché which does not represent his real attitude. In listening to his comments, it becomes possible to recognize that in his contact with Negroes the subject treats them as inferior, dirty, and superstitious beings to the point that he would not consider social contact with them except on the level of servants.

What we have said here about the measurement of attitudes toward social issues by the interview procedure also applies to the study of a person's attitudes and relationships to his family and friends. These are some of the pieces of information which the clinician usually tries to obtain by his diagnostic interviewing and testing. The use of questionnaires is limited for this purpose because of the inflexibility of the testing procedure. In the interview the examiner is able to note the expression of emotion and the inconsistencies of statements which suggest something deeper than the superficial information which the patient is providing by his words. Moreover, he can vary his approach to suit the situation. Again and again in the field of clinical psychology we find that the interview is the core of our diagnosis or personality evaluation and that it is really irreplaceable in that capacity. It may be used in the fashion of the self-report technique as well as in the behavior-study procedure. When the clinician uses the words of the patient or subject as information per se, then he is employing the interview in much the same way as if he were using a pencil-and-paper test. When the clinician interprets the words in the context of the subject's other verbal and nonverbal behavior, then he is treating the interview like a behavior-study technique as well.

Some problems arise in the field of attitude measurement that are found with all self-report procedures. As much as in the case of the personality inventory which asks personal questions, the subjects are apt to be careful, suspicious, and even motivated to create a false impression, depending on how they interpret the situation. Under what conditions people are tested determines to some extent how they will respond.

Studies which have attempted to correlate actual behavior with attitude

measurement have been done by Stouffer (1930), for example, who found high agreement between judges' ratings of attitude and attitudes based upon self-report. Smith *et al.* (1942) also found good agreement. Actual and stated behavior was also measured by Corey (1937), but practically no relation was found between the professed attitude of college students to cheating and the actual amount of cheating that was done. A technique similar to the one used by Hartshorne and May (1928) was employed. A study of LaPiere (1934) also showed extremely poor correspondence between professed attitude and behavior. It is clear that, under many circumstances, self-reports are very poor indicators of actual behavior.

In addition to the problem of report versus behavior, Robinson and Rohde (1946, *Two experiments with an anti-Semitism poll,* p. 138) have shown that the person doing the interviewing in attitude measurement may make a very great difference in the responses in some situations. When people were asked the question, "Do you think the Jews have too much power?" the percentage of "yes" answers depending upon the interviewer was as follows:

With a non-Jewish interviewer	24.3%
With a Jewish interviewer	15.6
With a Jewish interviewer, using a Jewish name	5.8
With a non-Jewish interviewer, using a non-Jewish name	21.4

This really affirms what many people might have guessed but which is nevertheless a most important problem in attitude measurement. The expression of attitudes depends upon the social pressures which the interview situation is perceived to have by the subject.

One would guess that real attitudes are no less complex and difficult to study than are any other personality attributes. While perhaps the greatest attention has been given to the attitudes of groups of people under varying circumstances, attitude measurement really merges with any other form of personality evaluation, particularly when the focus is upon an individual. Attitudes toward parents, siblings, friends, the doctor, society, and so forth are part of what we investigate when we diagnose patients. Moreover, attitudes like anti-Semitism and other prejudices may be shown to be associated in part with parental dependence, insecurity, and personality rigidity (Frenkel-Brunswik and Sanford, 1945). The attitude of the clinician toward the patient whom he is interviewing, the psychologist's personality, the way he conducts himself and phrases questions, as well as the limitations of the patient's insight and his desire to maintain his self-esteem—all these factors which we recognize as important in attitude measurement are also important in clinical evaluation. They must be recognized and seen through if the clinical evaluation is to be accurate. Usually we ask more than merely what is the attitude of the patient. We want to know, in addition, how he got that way, what factors underlie his attitudes, and what can be done about them.

SUMMARY

In this chapter two general approaches to personality measurement have been discussed, the *behavior study* and the *self-report* techniques. The former procedure presents problems because of the difficulties inherent in making observations in free-behaving situations and converting or abstracting these observations into objective or quantitative form. Moreover, making the situations more available to objective measurement by using test situations introduces the difficulty of interfering with the behavior which we are trying to study.

Even if we are able to do an effective job of observing and recording, it is usually necessary to interpret what we have seen. The clinical psychologist, usually a dynamicist, wishes to infer what motives and mechanisms underlie the external behavior. Here there arise problems concerning the reliability and validity of the interpretations which are made.

However, we have suggested that the general approach of behavior study has enough to recommend it to be well worth our efforts to solve the problems which are inherent in it. The human being in action must be observed continually before we can fully understand him. It is in this sense that the clinician has the opportunity to make the most important contributions to personality theory and measurement. His daily activity and training are designed to make him an effective observer of persons. But the job cannot be done unless he is aware of all the methodological problems which are involved.

As a consequence of the desire of psychologists for objectivity, self-report tests of personality have flourished in the last 35 years, culminating in the testing market being almost dominated by them. Their great virtues have been their objectivity, simplicity, and economy. On the other hand, a great deal of the validity of measurement has been sacrificed with them. Information provided by them is apt to be superficial and biased by their transparency. More recent tests have been designed to correct some of the disadvantages of the self-report techniques. For example, the Minnesota Multiphasic Personality Inventory is more thorough than most and contains scales which offer some clever checks on the legitimacy of the subject's answers.

The study of interests and attitudes also falls under the heading of self-report techniques of personality measurement. The problems we have discussed concerning the use of pencil-and-paper tests of personality also apply to the measurement of interest and attitude. The influence of the interviewer, the relationship between word and deed, the phraseology of the question, the emotional impact of what is being studied, and other methodological problems offer challenges to the ingenuity and knowledge of the psychologist concerned with this area.

Every bit of information and interpretation derived from behavior study

or self-report procedures should be checked as much as possible with information and interpretations from other sources. The modern clinical approach has a large tool chest of imperfect instruments, the most important of which appears to be the clinician himself. It is within his power to be continuously skeptical and suspicious of his judgments and to find ways of improving his tools, studying them, and devising new ones where the occasion demands. The behavior-rating and self-report techniques have great usefulness if they are used with this perspective in mind.

CHAPTER 8

PERSONALITY MEASUREMENT: II. PROJECTIVE TECHNIQUES

No other approach to the measurement of personality has received such wide interest among psychologists as the projective technique. Some of the most important tests that are used in the modern psychological clinic fall into this category. In clinical training programs projective techniques take up a large share of the student's time. The literature on projective techniques has become so voluminous that it is nearly impossible to keep up with it completely and attend to any other aspect of psychology. This field is not only an area of psychological interest, but it seems to be an area of conflict as well. The divergent views of the clinical and laboratory psychologists are frequently best illustrated by the conflict of opinion concerning the theory and technology of projective testing.

In keeping with the earlier policies of this book, we shall have more to say about theory and methodology than about the details of the projective instruments themselves. There are many other chapters and even books devoted to detailed descriptions of the tests themselves. Bell (1948) has written one of the most complete coverages of the area. A book by Apt and Bellak (1950) represents another source. Symonds and Samuel (1941), Symonds and Krugman (1944), and Sargent (1945) have earlier discussions of the projective area. Almost any up-to-date text on psychological testing contains a section on projective techniques. White (1944) has also written an excellent chapter on the subject. Virtually no book on personality or clinical psychology in recent years fails to include the projective story. In this text we shall first discuss the theoretical background of the projective movement. Then we shall describe the main types of techniques and examples of each. At the end of the chapter we shall attempt to evaluate the field.

THEORETICAL BACKGROUND

In the chapter on the nature of personality we have already suggested that the theoretical position one takes concerning the nature of personality is apt to determine, in part, what kind of devices are used in its measurement. This is nowhere better illustrated than in the case of the projective approach to

personality measurement. The projective test is really a product of the depth psychologists, that is, those clinicians who have stressed the importance of unconscious processes. The stimulus-response theorist would not have recommended techniques which allow us to make elaborate inferences about the organization of needs and defense mechanisms within the individual. The depth psychologists, on the other hand, have been less interested in the motor responses that people make than in the inferred processes which determine them. For this reason a psychologist with a dynamic frame of reference will look for test situations that will maximize the opportunity to obtain information about these inferred processes from the behavior of the individual. In general, although the projective techniques did not spring directly from the constructs of the early psychoanalysts, they received their main impetus from psychoanalytic influences. We shall see that the rationale for the modern projective test rests upon two sources, the Freudian concepts of personality and the recent laboratory findings concerning the relationship between motivation and the perceptual process.

Freudian Concepts. Just before the turn of the century Breuer and Freud (1895) were using hypnosis as a rapid way of curing nervous disorders. As this work progressed, hypnosis appeared to have major limitations as a treatment technique. In the course of exploring for new procedures, Freud began to employ a technique which has been called "free association." Freud began to believe that, given the appropriate circumstances, the motivations and mechanisms which were at the root of the patient's illness must eventually appear in his verbal associations. If an effort was made by the patient to assume a passive attitude toward his thoughts, allowing them to flow freely, the determiners of the neurosis would make themselves known. Freud did not really mean "free association" by this procedure. In fact, he conceived of the chain of associations as controlled or determined by unconscious processes. In that event these associations would enable the clinician to get clues about the nature of these unconscious processes. The technique of association became the foundation of the psychoanalytic approach to diagnosis and treatment. The reasoning behind the use of free association also became part of the rationale for projective psychology.

We might also note here that, as the Freudian concepts and techniques developed, *dream interpretation* took a place alongside free association as another approach to the unconscious processes so important in the Freudian scheme. The Freudian theory identified dreams as the work of the ego. Under the relaxed conditions of sleep, unconscious urges threaten to break through to the surface and disturb the person's rest by the production of severe anxiety. Using the mechanisms of condensation, displacement, concrete imagery, and secondary elaboration (in the waking state), the ego disguises the true nature of the urges which are striving for expression. This compromise (the dream) which the drowsy ego produces was looked upon

by Freud as one of the keys to the unconscious domain of personality. By studying it, Freud believed that it was possible to discover the unconscious urges which were the sources of anxiety and the ego mechanisms by which they were dealt with by the patient. The manifest content of the dream was often distorted, bizarre, and nonsensical in nature. This was the result of the disguises which were thrown over the material by the ego. This manifest content corresponds somewhat to the motor responses of a person, that is, his overt behavior in any situation. It had to be translated into needs and mechanisms. Like all dynamic theorists, Freud did not believe the surface behavior to be important except in so far as it allowed us to guess what was going on underneath. It was the latent content (the unconscious material), along with the mechanism of distortion, which was important to him. Only by the technique of free association could these processes be discovered.

Freud did not limit his dynamic concepts to people with neuroses. He believed that normal everyday behavior could also be understood in terms of unconscious determinants. He wrote about this notion in a book called *The psychopathology of everyday life* (1938). Here he gave a great deal of attention to slips of the tongue which he believed reflected unconscious urges. Freud's belief that unconscious processes may be identified by these subtle bits of behavior offers the first major rationale for the entire projective approach to personality. It is necessary to find some formula by which the superficial behavior of the person may be translated into a picture of motivations and defense processes. Dream interpretation, free association, and the concept of psychic determinism (which is the term Freud gave to his belief in the unconscious determination of behavior) are really the most important antecedents of the modern projective technique.

The Meaning of Projection. The reader may also recall that the term "projection" was used by Freud to indicate one of the mechanisms of defense of the ego. In the process of projection, motives which are unacceptable to the individual are treated as belonging to other people. For example, the maiden lady who fears walking alone on the street for fear of sexual attack is probably disguising her own desires by attributing them to the men she might meet. She therefore protects herself against the severe anxiety that might ensue if she recognized her unacceptable urge for sexual gratification.

The early meaning of the term projection concerned this defensive function. However, in later years the term projection became associated with a somewhat different process as well. Test situations in which the individual is asked to interpret ambiguous stimuli like pictures or ink blots were called "projective tests." In such a situation people were said to project their past experiences and needs into the material. For example, in the case of the Thematic Apperception Test (Morgan and Murray, 1935) pictures of elderly ladies might be seen by the individual as mean or domineering mothers. We are often able to say that such an interpretation represents the

individual's projection of his experiences with his own mother whom he reacts to as mean or domineering.

The two uses of the term projection have considerable overlap. Both involve a process of ascribing to some situation or person attributes which are not necessarily there in reality. Other people will have different interpretations. The characteristics which are imputed to the stimulus come from the needs of the interpreter rather than from the stimulus itself. We therefore say that the stimulus is ambiguous. Whenever everyone agrees that a stimulus is a boy, a chair, etc., it cannot be called ambiguous. However, as the varieties of interpretation which are given to the stimulus increase in number, we say that the stimulus is more ambiguous. In most people the presentation of an unambiguous stimulus will produce little information about them because there is no room for interpretation and, therefore, for the projection of personal needs or values. Clinical psychologists recognize that a person's interpretation of an ambiguous stimulus will produce important information about his personality.

Because so many situations in ordinary life are somewhat ambiguous, there is a great deal in behavior which affords the astute observer the opportunity to make inferences about the motives which underlie it. It is easy to observe instances of projective behavior in our everyday contacts. For example, we may have noticed a girl who has just bought a new dress which she feels is somewhat too daring because of the low neckline. Now that she has put it on to go to the party, she regrets buying it and begins to develop a strong sense of embarrassment about it. That evening she is certain that the other girls are looking scornfully at her immodesty, whether this is actually true or not. In fact, no one else might have even considered the dress to be in bad taste. A strong personal need has made her interpret the other girls' behavior in a way which in this particular situation may be quite far from the facts.

The projective test attempts to identify a person's motives and mechanisms by introducing an ambiguous stimulus for interpretation of some kind. Just as we might have inferred something about the personality dynamics of the embarrassed young lady with the new dress from her interpretation of the social situation, so we may obtain similar information by the use of the projective test. Later we shall discuss in some detail the kinds of stimulus situations which have been constructed for this purpose.

Modern Laboratory Findings. In the past several years there has been a revival of interest on the part of experimental psychologists in the process of perception. In the broadest possible use of the term the task required of the subject in many perceptual situations has a great deal in common with what happens in the projective test. If the stimulus in a perceptual experiment is made difficult to perceive or ambiguous, then the subject has a limited number of stimulus cues with which to identify what has been presented to him. He must therefore project his own personality into his perception of

the stimulus. In recent research an effort has been made to study the relationship between personality variables and perceptual behavior by making the stimulus difficult to identify and then systematically increasing the amount of information available to the subject. This has been done with an instrument known as a tachistoscope which controls the illumination and exposure time of the stimulus. A favorite technique of much of this work is to begin at a below-threshold exposure speed or illumination and gradually increase the duration or brightness of the material until the subject reports the correct perception.

By varying this procedure, it has been possible to study the contribution to the perceptual and imaginal processes of all sorts of conditions. Most of the earliest work of psychologists on perception was concerned with the significance of the physical nature of the stimulus, the perceptual experience of the subject, and the characteristics of the sensory systems which functioned in perceiving. While these problems remain important, the newer work which we are discussing here has dealt with the relationships between personality variables and perceptual behavior. The technique of using somewhat ambiguous stimuli and attending to individual differences in perceiving was perfectly adapted to the investigation of these personality variables in which the earlier perception psychologists were little interested.

At first the experiments in this area began as a trickle. In 1936 and 1937, Sanford presented evidence that hunger produced an increased likelihood that children would interpret ambiguous outlines as related to food and eating. Later, Levine, Chein, and Murphy (1942) attempted to obtain supporting evidence. Proshansky and Murphy (1942) studied the effects of reward and punishment upon perception. While these and other experiments produced somewhat ambiguous results and while the experimental controls were not entirely satisfactory, they suggested some interesting possibilities in the study of needs and values as determinants of perceptual behavior. Bruner and Postman (1949) discussed this movement in perceptual theory and research in a paper summarizing some of the work which had been directed toward the problem up to 1949. The bibliography which has grown up on this problem in the last several years has become large and unwieldy. Much of the work, both on theory and on research, has been controversial. Relatively little has been done along the lines of pinning down the mechanics of the relationships between personality variables and perceptual behavior. However, what has seemed to emerge from this work is that there is a decided relationship between personality variables like values, motives, and mechanisms, and the way a person perceives or interprets need-related stimuli when they are made somewhat ambiguous by rapid presentation or poor illumination. Some of the better known studies along these lines have been done by Bruner and Goodman (1947), Bruner and Postman (1947, 1948), McClelland and Atkinson (1948), Lambert, Solomon, and Watson (1949),

Carter and Schooler (1949), McGinnies (1949), Lazarus and McCleary (1951), and to date, a great many others. While no complete bibliographies on the subject have been published, a good sample of the work in this area may be found in the series of articles in the *Journal of Personality,* 1949, Vol. 18, Nos. 1 and 2.

Let us examine briefly how this developing area of interest in perceptual dynamics concerns us here. In the first place the finding that needs may determine, to some extent, what a person perceives has important personality implications. Many psychologists, particularly the phenomenologists, look upon perception as a primary determiner of behavior. For Rogers (1951), for example, the changes in personality of the individual which are said to occur in psychotherapy can be understood in terms of alterations of the person's perceptions of himself and the world about him. In any case, if personality variables are important determiners of perceptual behavior, then the examination of individual differences in perceptual behavior should be a fruitful approach to the study of personality. Frenkel-Brunswik (1949) and others have argued effectively for the use of a perceptual approach to the study of personality dynamics. Instead of being concerned with the perceptual process itself, it becomes possible to simply use perception as a tool. An example of what may be done with this personality-centered use of perceptual situations is an experiment by Lazarus, Eriksen, and Fonda (1951), who were able to show substantial correlations between clinical material derived from a sentence-completion test and the accuracy of the perception of hostile and sexual sentences. Aggressive, sexual, and neutral sentences with the same speech intensity were recorded on a wire. A noise background was inserted so that only about 50 per cent of the material could be correctly identified. By analyzing which of the material was perceived more accurately, perceptual profiles were obtained which could be related to the clinical diagnostic information. The authors found that the defense mechanism of the patients was also a determinant of the perceptual behavior. Obsessive patients showed significantly higher accuracy of recognition of the emotionally toned sentences than did hysterical patients, even though their recognition accuracy for the neutral sentences was the same.

We have noted earlier that there are important parallels between the kinds of perceptual situations used in the study of perceptual dynamics and the projective techniques. Both use an ambiguous stimulus (in perceptual studies, it remains ambiguous for any subject until the correct recognition is made) and require the subject to interpret it or identify what it is. The subject must call up past perceptions and associations which can be related to the characteristics of the present stimulus. The fact that laboratory research can demonstrate that a subject's needs will affect what he perceives or how he will interpret the stimulus is direct confirmation of the principle behind the projective approach.

A few studies have succeeded in bridging the gap between the perceptual research of the laboratory and clinical hunches about projective material. Atkinson and McClelland (1948) have shown that hunger will affect the kinds of stories given on the Thematic Apperception Test. Under food deprivation, subjects give more TAT stories with eating or food themes than when satiated. Eriksen (1951B) has shown that the willingness of the subject to give stories with aggressive themes on the TAT correlated significantly with the perceptual recognition thresholds for pictures with aggressive implications. Eriksen and Lazarus (1952) have evidence that failure to see certain kinds of percepts on the Rorschach test often indicates that the percept has threatening or emotional implications for a subject. The authors conclude that a person's interpretations of the ink blots are guided directly by needs to recognize or avoid emotional material.

These studies are beginning to support and elaborate the clinical assumptions underlying the use of the projective techniques. The characteristic motives and ways of dealing with conflict (defense mechanisms) are reflected in a person's interpretations and perceptions of ambiguous stimuli, just as Freud believed they were reflected in a person's associations, dreams, and everyday language and behavior.

Clinical Aspects of Projection. Responding to the older clinical assumptions about projection as well as to the perceptual implications of the process, Bellak (1944) has characterized the responses to projective situations in terms of three aspects, the adaptive, projective, and expressive. While projective stimuli are ambiguous in some ways, in any projective test one may find certain agreements among subjects concerning their interpretation. For example, in the Rorschach ink-blot situation certain responses are given rather frequently to some of the blots. These are called "popular responses." Many people agree that card 5 looks like a bat or butterfly. Of course, if everyone agreed that this was the case, then there would be no ambiguity at all to the stimulus. It would be like showing subjects a pencil and asking them what it was. Little information could be derived from the subject's answer. Just about everyone (except perhaps psychotic patients, people who had never seen a pencil, infants, or persons with extremely low intellectual capacity) would agree that the stimulus was a pencil. In Bellak's terms, the individual "adapts" to reality in his perceptions and interpretations. This is merely saying that he interprets it in ways which are in agreement with the experience of most people in his culture.

This side of projective behavior may be useful in two ways. First, it often allows us to assess the degree to which a person is in "contact" with reality or the world about him, that is, he perceives things (at least within certain limits) in ways which are in agreement with the experiences of most other people. We can sometimes determine the extent to which he is ill, that is, the extent to which his own needs allow him to distort perceptually what other

people agree is there. Secondly, this "adaptive" quality of perceptions and interpretations allows us to determine the extent to which an individual thinks in ways which are deviant from the general cultural pattern without necessarily being psychotic.

The *projective* aspects of the subject's responses provide useful sources of information about the individual's needs and defense mechanisms. The more ambiguous a stimulus is, the more room there is for the subject to interpret it in accordance with his own experience and personality. Stimulus situations which produce a great deal of uniformity in interpretation among subjects (highly unambiguous stimuli) are less useful to the clinician who is seeking information about the subject's unique way of dealing with the material. This information can be used to make inferences about the needs and defense mechanisms of the individual. This is the kind of projection we have been talking about earlier in this chapter.

Finally, Bellak distinguishes the *expressive* aspects of the projective response. This refers to the way or style in which the individual organizes or deals with the stimulus situation. It is not concerned with what the person sees, but how he goes about the task of perceiving and communicating. For example, in telling a dramatic story, such as on the TAT, a person may employ a careful or rigid sentence structure with attention given even to punctuation. On the other hand, he may speak loosely, allowing his ideas to flow back and forth easily. In some cases this freedom of expression may tend toward confusion and disorganization. One subject may elaborate his story with picturesque detail, while another will be quite meager in his productivity.

The projective aspects of a subject's response have often been spoken of as "content," while the style or way in which the person goes about the task has been called the "formal" aspect of projective material. Some of the tests have been designed primarily to get at formal aspects and others to study the content. Since both content and formal material are part of every projective situation, our instruments usually allow us to deal with both. When we discuss some of the particular tests, some instances of all three, the adaptive, expressive (formal), and projective (content) aspects of projection will be pointed out.

When we were discussing the self-report techniques for personality measurement, we pointed out that one of their chief disadvantages is obtuseness. The implication of each inventory question is easily understood by a person of average intelligence, and this fact makes the results of these tests subject to ready manipulation by the testee. The scores of nearly any personality test may be influenced by the motivations of the subject. To some extent this is true of the behavior-study approach. It is even the case with the projective tests but to a far lesser extent.

For example, Fosberg (1938, 1941) varied the instructions under which

the Rorschach test was administered, using the standard instructions, presenting instructions to make the best possible impression and instructions to make the worst impression. He concluded that the psychogram obtained was not appreciably affected by the desire to make good or bad impressions. We suspect that this is the case only, however, if the subjects are reasonably unfamiliar with the way in which the test is evaluated. Abramson (1951) has shown that, if you indicate to one group of subjects that successful people see a great many whole responses in the blots and to another group that successful people give many small detail answers, the two groups will show results that parallel the instructions. In the main, however, there is little doubt that a major advantage of the projective approach is that its results are less easily affected by the subject's immediate motives in the test situation.

If one believes that a person's motives may be unconscious or cannot always be expressed directly by him, then the projective techniques offer the great advantage of allowing us to study these unconscious or unverbalized processes. Often it is impossible to get at needs and sources of threat to the individual directly by questioning or interview. Prolonged analysis by free-association techniques is costly and often impossible. The projective tests offer us an opportunity to make inferences about these dynamics when a person simply refuses to permit their study, when he is unable to express them, or when he is unaware of their existence. By studying the behavior of the individual in the projective situation, it is often possible to make guesses about the bases of a patient's problems even when direct study is difficult or virtually impossible. Special problems of validity confront us in the use of the projective techniques to obtain this kind of information. While the basic principle of the projective approach has rarely been contested by nonclinicians, the kinds of claims that have been made for particular tests like the Rorschach have been continuously under fire. In our description of some of the tests, we shall have occasion to illustrate the problems of validity that arise in the use of particular techniques. Following our discussion of some of the tests themselves, we shall devote some time to the general problem of projective-test validity.

THE MAIN PROJECTIVE TESTS

There is virtually no limit to the kinds of stimulus situations which might be used as a projective test. Even a standardized individual intelligence test like the Wechsler-Bellevue or Stanford-Binet produces behavior which can be analyzed projectively, expressively, and adaptively. However, many of the clinical psychologists who have introduced new projective tests have failed to recognize that producing a satisfactory stimulus situation is a relatively simple problem. The scoring and interpretation of the person's responses represent the real difficulty in this field.

Because of the suitability of such a wide variety of stimuli for projective tests, the field of clinical psychology is threatened with being overburdened with tests about which we know very little. It appears to us that the real need, at present, is to study the characteristics of projective behavior with a limited variety of stimuli. In this way the contribution to the response of the stimulus itself can be studied and an effort made to translate with high validity the response behavior into information about the motive systems and defense patterns of the individual. Despite the many years in which the projective concept has been with us, relatively slow progress has been made on the basic problems of understanding the uses and limitations of this approach. But we shall discuss some of these problems at greater length later.

While no classification of projective tests is perfect, we are able to divide them for convenience into those using verbal stimulus materials, those using various kinds of visual pictures, those involving creative activities, those studying mainly expressive movements, and miscellaneous forms. This is a stimulus classification following, in part, the analysis by Bell (1948). It appears to us to be the simplest way of grouping the tests, although other classifications could be readily defended. Let us examine each of these briefly.

Verbal-stimulus Materials. Under this category of stimulus materials we must consider those techniques in which some form of verbal stimulus is presented which the subject must deal with in some way. Two basic kinds of procedures fall under this heading: the word-association technique and the completion technique. The current popularity of some of these procedures makes it worth while discussing them with more than a passing reference.

Word-association Tests. In general, the word-association technique was the first formal projective test. The history of word association really antecedes the modern concept of projection. Galton, as early as 1879 and later in 1883, was interested in word association as a means of studying mental processes. Experimental psychologists like Wundt (1908–1911) and Cattell and Bryant (1889) performed association experiments. Although Jung (1910, 1918) is usually given credit for first exploiting the technique for clinical diagnostic purposes, Sommer (1899) and Kraepelin (1892) actually preceded him in this work.

The most productive work, that of Jung, arose out of the psychoanalytic theories. He used a list of 100 items which included a number of relatively innocuous as well as emotional words. By studying signs of disturbance to particular words on the part of the subjects, Jung believed that the task of identifying emotional complexes could be facilitated. The complex indicators included abnormalities of content, repetitions, stammering, whispering, multiword replies, lengthened response time, and behavioral signs of anxiety like shifting position, flushing, laughing, the catching of breath, etc. It is possible to divide these signs, after Bellak, into projective (content), expressive

(style—as in flushing, whispering, etc.) and, of course, adaptive (in terms of statistically common responses).

Since Jung's first published list, a number of other word-association tests have appeared. Almost at the same time as Jung, Kent and Rosanoff (1910) published a list of words of relatively neutral character with the emphasis upon measuring unusual content as a means of differentiating normal individuals from those with psychoses. This approach has not proved as fruitful because of the difficulty of obtaining large enough samples for normative data and the fact that word usage varies so greatly with culture, geographical region, education, age, intelligence, and socioeconomic status. Modifications of both lists may be found in the literature on word-association tests. Probably the most successful clinical use of the general technique of Jung (with some adaptation) was reported by Rapaport, Gill, and Schafer (1945, 1946) (see Fig. 10). The test was used along with a battery of other diagnostic procedures to differentiate between the various diagnostic groups at the Menninger Clinic. In describing their approach, the authors have attempted to provide a full rationale for their procedures. In addition to clinical use, the word-association technique has been used experimentally to study various psychological processes such as the effects of hunger on imagination (Sanford, 1936, 1937). Food associations were found to increase under food deprivation in children.

1. world	21. suicide	41. taxi
2. love	22. mountain	42. mother
3. father	23. house	43. table
4. hat	24. paper	44. beef
5. breast	25. homosexual	45. nipple
6. curtains	26. radiator	46. race
7. trunk	27. girl friend	47. water
8. drink	28. screen	48. suck
9. party	29. masturbate	49. horse
10. bowel movement	30. frame	50. fire
11. book	31. man	51. vagina
12. lamp	32. orgasm	52. farm
13. rug	33. movies	53. social
14. chair	34. cut	54. son
15. boy friend	35. laugh	55. taxes
16. penis	36. bite	56. tobacco
17. dark	37. woman	57. city
18. depressed	38. dance	58. intercourse
19. spring	39. dog	59. hospital
20. bowl	40. daughter	60. doctor

FIG. 10. Word association list used by Rapaport, Gill, and Schafer. (From Rapaport, D., Gill, M., and Schafer, R. *Diagnostic psychological testing*. Chicago: Year Book Publishers, 1946. Vol. II, p. 13. By permission of the publishers.)

The word-association technique has never been shown to be a practical means of clinical diagnosis by itself. With 151 cases, Rapaport, Gill, and Schafer (1945, 1946), mentioned above, found the test useful for differential diagnosis in combination with other clinical tools. Attempts have been made to relate the reactions on the word-association test to other indices of emotional expression. Peterson and Jung (1907), Crosland (1931), Hunt and Landis (1935), and Smith (1922) have used psychogalvanometer responses as an index of emotions. The results of these studies have been conflicting, Smith finding a relationship of .47 between GSR and association time, and Hunt and Landis noting that only one out of 22 subjects produced a significant correlation. Luria (1932) used the word-association test with a tremograph technique for measuring emotional reaction and found some positive evidence of a relationship. Krause (1937), Ebaugh (1936), and Huston, Shakow, and Erickson (1934), using the Luria technique, supported these positive findings. Others like Kephart and Houtchens (1937) and Reymert and Speer (1939) have suggested that the emotional reactions identified by the word-association technique are independent of the words used and might even occur with nonemotional material like an arithmetic series. Crosland (1929) produced substantial evidence that unconfessed misdemeanors among college students may be detected through the word-association technique. Many other studies have been done with the word-association procedure.

There is some disagreement among clinicians concerning the extent of the usefulness of word association in clinical diagnosis. Some, like Symonds (1931), Meier (1938), Rapaport, Gill, and Schafer (1945, 1946), and Schafer (1948), appear to find it very useful. Wells (1935) concedes only a limited value to the approach. There is no doubt that few psychologists would give the technique a central position in diagnostic work. By itself the technique has major limitations. However, the instrument is frequently used and has produced important research results in the personality sphere. Moreover, most clinicians agree that, in the hands of a skilled clinician, it is often an excellent supplement to other sources of information about a patient.

Completion Techniques. In this type of projective situation a series of incomplete sentences or stories is presented to the subject with the instructions that he must finish it. This technique has been suggested as an improvement on the word-association test. It is closely related to it and in recent years has had increasing use in research and clinical diagnosis. Like the word-association test, there are an unlimited number of forms that the test can take. Many psychologists who use the approach have made up their own version of the test for special use in particular situations. For example, in a study by Lazarus, Eriksen, and Fonda (1951), cited earlier, auditory perceptual recognition of anxiety-producing sentences was related to clinical information derived from a sentence-completion test. The sentence-comple-

tion test was designed by the authors to fit the needs of their particular experiment. The items in a sentence-completion test may be highly ambiguous such as "I feel . . .," or more structured so that a more limited number of responses are possible, for example, "I get angry when. . . ."

The story-completion technique has been rarely used although there is some indication that it has considerable usefulness as a projective device. It is similar to the sentence-completion technique in that an unfinished story is presented for completion. However, scoring problems are apt to be different because the character of the material obtained is not the same as the data derived from sentence-completion items.

With the exception of a study by Lorge and Thorndike (1941), the reliabilities of the sentence-completion tests have been found to be moderate (Rohde, 1946; Rotter and Willerman, 1947). Scorer reliability has been found to be good in a number of instances (Rohde, 1946; Rotter and Willerman, 1947; and Lazarus, Eriksen, and Fonda, 1951). Potentially the technique offers a great deal but largely in the same way as the word-association test, that is, as a supplementary feature in the diagnostic situation. It is unlikely that, by itself, it could ever be used to make diagnostic decisions.

A few words might be said about an earlier verbal technique. In 1936 Skinner developed a technique to study latent speech. He called this device the "verbal summator." It consisted of phonograph records which contained a series of vowel sounds at low intensities which were repeated. Later Shakow (1938) and Shakow and Rosenzweig (1940) adapted the technique for personality diagnosis. Used in this fashion, the device has been called the "tautophone." Trussell (1939) and Grings (1942) as well as Shakow and Rosenzweig have worked with the technique. In the main the technique has not been taken up by other clinicians.

The Use of Pictures. One of the most frequently found forms of projective stimuli are ambiguous pictures of various kinds. The subject is usually required to interpret or react to these pictures in some way. The special techniques that may be classed under this category are the Rorschach Test, the Thematic Apperception Test, the Picture-Frustration Test, the Szondi Test, and a miscellaneous group which includes some less well-known visual procedures. We shall not discuss all these very well-known techniques in detail. Because the Rorschach test and the TAT are so popular in the modern clinic, we shall spend a little more time with them.

Rorschach Test. Before Hermann Rorschach developed his test (it was published in 1921), a number of people had been using ink blots and observing their possibilities in studying imagination. Kerner (1857), Binet and Henri (1895), Dearborn (1897, 1898), Sharp (1899), Kirkpatrick (1900), Pyle (1913, 1915), Whippel (1910), Bartlett (1916), Parsons (1917), and Lundholm (1924) are some of the writers who described ink-blot techniques. A review of the work prior to Rorschach may be found bv

Tulchin (1940). Beck (1939, 1945), Klopfer and Kelley (1942), Krugman (1940), and others have also discussed the historical development of the Rorschach test.

Rorschach himself was a Swiss psychiatrist who was searching for an effective and simple technique of clinical diagnosis. He died in 1922 while still working on the problem. The monograph on which he had been working was later published posthumously by a colleague named Oberholzer (Rorschach and Oberholzer, 1924). For many years the technique went nearly unnoticed in this country until the 1930's when Beck began publishing articles on the method. In 1937 Beck, and later in 1942, Klopfer and Kelley, published a manual for the test which succeeded in popularizing the technique to an extraordinary extent. For many years the test was taken up by a large proportion of clinical psychologists as a primary technique in psychodiagnosis; and by others (particularly nonclinicians) it was described as sheer nonsense. More argument has surrounded the instrument than can be imagined without reading the voluminous reports in the literature. Many clinicians have become wedded to the Rorschach Test so that it has become impossible for them to consider any possibility of improvement or of the realistic evaluation of the diagnostic decisions based upon its use. It has been only in the past four or five years that experimental work has appeared in a systematic fashion concerning the basic assumptions and interpretations of the responses to the test.

To illustrate the fixity of the regard for the Rorschach technique, Bell (1948) wrote, "The extent of Rorschach's contribution is indicated by the fact that the major elements of administration, scoring, and interpretation, which were conceived and developed by him, still continue to be used to a great extent in the same manner as proposed." To this we might add that the fervor of many clinicians who steadfastly refuse to have anything to do with extensive investigation of the assumptions underlying the technique has probably retarded progress in clinical diagnosis during the years in which the Rorschach has remained essentially unchanged—this in spite of the fact that such change has been persistently indicated by competent research. Basically, many of the main principles behind the test appear to be sound. Moreover, it does offer a source of information about the patient which is excelled by no other test device available to the clinician. But no scientific procedure has ever been successfully developed without considerable modification and improvement over the years of its application.

The Rorschach Test consists of a series of 10 ink blots which are presented one at a time to the subject who is instructed to say what they look like, resemble, or might be (see Fig. 11). The reader should avail himself of one of the many manuals which describe in more detail the problems of rapport and the ways of handling questions on the part of the subject concerning what he should do. Schachtel (1945) has an interesting discussion on the various ways in which a subject may interpret his task and the importance of

this for diagnosis. Fosberg (1941), Kimble (1945), and Abramson (1951) have data which relate to the effects of varying instructions or the social conditions under which the Rorschach Test is taken.

During the test administration, the examiner records the subject's responses, comments, and reactions, the time it takes the subject to give his first response when the card is presented to him, the total time for the test,
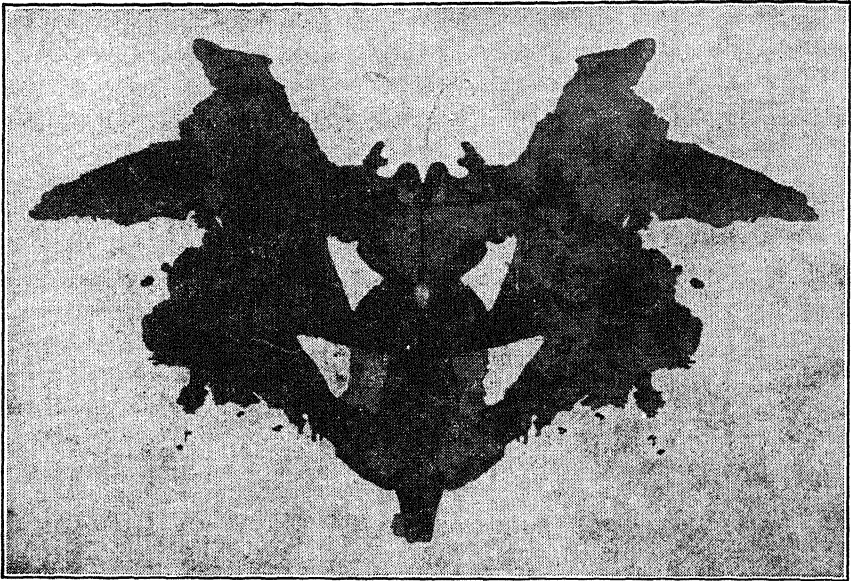
Fig. 11. An example of a Rorschach ink blot. (From Rorschach, H. *Rorschach Ink Blots.* Chicago: Stoelting. By permission of the publishers.)

and the position of the card when each response is given. Following this "free-association" period, the subject is questioned concerning the nature of the responses which he gave in an effort to determine exactly what the subject saw, where in the card he saw it, and what characteristics of the blot determined the particular responses. This is called the "inquiry." A third period is often provided which is called the "testing of the limits." At this time the examiner notes what kinds of responses have not been given by the subject which are usually given by other people. By suggesting these kinds of responses to the subject and asking him to see others like it in the cards, the examiner attempts to discover whether the subject's failure to see something represented lack of interest or an inability or unwillingness to give such percepts. For example, if the subject has given no color responses (five of the ink blots contain colored inks), the examiner may pick out a frequent response such as "green worms" and ask the subject if he can see them. If he can, the subject is then

asked to go through the blots and select other answers in which color is part of the response. This procedure of testing of the limits is not used by all Rorschach testers. It was introduced by Klopfer, who regards it as highly important in the evaluation of the Rorschach record. In many ways the authors believe that this part of Rorschach technique is one of the most fruitful aspects of the test.

The Rorschach Test has been modified by some clinicians for group administration. In this case the ink blots are reproduced as lantern slides and projected before a group of subjects on an ordinary screen. While there are several forms of the general group procedure, the typical pattern is for subjects to write down on specially prepared blanks their responses to each slide. A time limit of 2 to 3 minutes is usually imposed. The inquiry is conducted by asking the subjects to describe the nature of their responses in specially designated places in the test booklet.

The virtues of the group procedure are entirely related to speed and economy. It is possible to cut down considerably on the time consumed in the individual administration Some information is also lost by this technique, although there have been a number of studies which support the use of the group technique as being substantially comparable to the individual administration (Harrower-Erikson and Steiner, 1941; Hertzman, 1942; and Lindner, 1943).

Four features of the subject's responses to the Rorschach Test are scored. These have been termed location, determinants, content, and the popularity or originality of the response. There are several systems of scoring, but, in general, they are all variations of the same basic scheme. *Location* is identified in terms of symbols which stand for whether the area of the blot selected is the entire blot (*W*), frequently selected sections of the blot (*D*), or rarely given portions of the blot (*Dd*). Further subdivisions are made by Klopfer in accordance with whether the location includes inside details, edge details, etc. *Determinants* refer to whether a particular response has been based on the simple shape or outline of the blot (*F*), the color (*C*), various shading impressions (*Y* or *V* in Beck's system; *K, k, c,* or *C'* in Klopfer's), or the impression of movement (*M* for human movement, *m* for inanimate movement, and *FM* for animals in motion). *Content* is scored in terms of a series of frequently used categories like human, animal, anatomy, geography, etc. Some responses are very frequently given by normal subjects. These are called "populars" (*P*). Others are extremely infrequent but represent reasonable interpretations of the ink blots. These have been called "originals."

The scoring of each record consists of attaching the appropriate symbols to each of the subject's answers in such a way that it represents as faithfully as possible an abstract of the individuals' reactions to the ink blots. From this symbol digest of the record, the qualitative aspects of the subject's performance, and the use of normative data concerning the patterns generally

found among people with various clinical syndromes or personality types, an *interpretation* about the individual's personality is given. Both quantitative information (that is, the data relating to the numbers, proportion, and patterning of the various kinds of responses like movement, color, and shading) and qualitative information (comments, attitudes, general approach to the task, etc.) enter into the final interpretation. Some examples of Rorschach Test interpretation may be found in the final chapter of the book which illustrates the clinical psychologist in action.

In using the Rorschach Test, it is possible to compare any particular test record with the typical patterns found in various clinical groups. For example, one may note in normative studies that a badly deteriorated schizophrenic rarely gives movement responses, or that depressive patients generally take a long time to respond to each card and offer abnormally few responses. This part of the interpretative task offers few problems that are not inherent in most tests. Validity depends upon the extent to which these features of the test results do really discriminate between various clinical types.

Of greater complexity is the technique of Rorschach interpretation which stresses the patterning of responses of a subject. Rorschach workers have usually argued that a proper interpretation of the test must be based upon the entire record, that is, upon the total intratest pattern of any subject. They have maintained that any particular kind of response has different meaning, depending upon the rest of the response picture and that, therefore, any isolation of a particular scoring category for validation purposes (*e.g.*, the number of movement responses or color responses, etc.) is unjustifiable.

In addition to this, some psychologists interested in the problem of Rorschach validation have pointed out that the clinician is trying to predict not only behavior but also the presence of certain inferred personality attributes which cannot be directly observed. They argue, therefore, that validation of the test by correlating it with simpler behavior is not appropriate.

These points are reasonable and are necessary consequences of the extraordinary complexity of the human personality and the nature of the clinician's constructs about personality processes. After all, the projective test is a technique for inferring, in part, hidden personality dynamics which consist of needs and defense mechanisms. However, in many instances, the insistence upon these points becomes an effective dodge behind which the uncritical psychologist may engage in all sorts of double talk about a patient without any check upon his evaluations. In this case, validation of an instrument becomes nearly impossible. It becomes possible for the clinician to play a game of "heads I win, tails you lose." For example, he may predict that this patient should have a poor prognosis on the basis of the lack of movement responses in the record. However, upon discovery that the patient promptly got well, he can fall behind the patterning argument and say he failed to notice the high *F+* per cent in the record. "Had we taken this into account," he says, "our

original prediction would have been quite different." While this kind of reasoning is perfectly justified if we are in the process of refining our tools to make better prediction possible, it may also have the effect of obscuring the true nature of the instrument and its limitations. In fact, Rorschach workers are often very immodest about the state of their knowledge about the test but are quite willing to hedge when their prediction does not hold up experimentally.

Moreover, with respect to the diagnosis of personality structure which is unobservable in a direct way, unless this hidden structure can be related to measurable variables, validation of these "predictions" is, indeed, impossible. The point to be developed from this discussion is that, to help us understand the patient, the predictions which are made about his behavior or the inferences which are drawn about the organization of his personality must be stated in such a way that they can be verified. This is too seldom done except in self-conscious experimental research, the findings of which have generally been ignored in clinical practice. To date there has been far too much confusion concerning what Rorschach validation or, for that matter, validation of any of the projective techniques really involves. An examination of the Rorschach literature uncovers many discussions of the problems of reliability and validity from different points of view. Fairly complete bibliographies may be found in Bell (1948) and Klopfer and Kelley (1942).

So many problems concerning the use of the Rorschach Test arise and so much has been written about it that it is impossible to discuss it all meaningfully without monopolizing the entire chapter. Since much of the published material on problems of administration, scoring, interpretation, reliability, and validity is readily available, the course of action we shall take here will be simply to refer the reader to the bibliographical sources already mentioned (Bell, 1948; Klopfer and Kelley, 1942). The interested student will find dozens of other sources as well.

The magnitude of the task of reviewing what has been done with the Rorschach Test may be illustrated by a table published by Benton (1950) which shows the number of articles on the instrument which have been published since 1924, as listed in the book by Bell (1948) (see Table 7). Even though this list is not complete, it shows the fantastic increase in interest in the Rorschach Test during the last few decades. In discussing the results of his review of the experimental validity studies, Benton (pp. 55 and 57) writes:

> This review of experimental and clinical data in respect to Rorschach performance leads inescapably to the conclusion that current Rorschach practice is built on extremely shaky foundations. It operates on the basis of assumptions which are largely unverified, and its apparent clinical success too often rests on statements concerning the patient which are

plausible, cogent or "fitting" rather than predictive in the true sense of the word. . . .

TABLE 7. PUBLICATIONS IN BRITISH AND NORTH AMERICAN JOURNALS DEALING WITH THE CLINICAL APPLICATION OF THE RORSCHACH TEST *

Year	Number of articles	Year	Number of articles
1924–1926	1	1936–1938	99
1927–1929	0	1939–1941	139
1930–1932	9	1942–1944	138
1933–1935	34	1945–1947	159

* From Benton, A. L. The experimental validation of the Rorschach test. *Brit. J. med. Psychol.*, 1950, **23**, 45. By permission of the publishers.

One may conclude that the Rorschach test, which has had so successful a history and which is so highly regarded by competent clinicians throughout the world, deserves considerably more systematic experimental exploration than it has hitherto received. The inevitable result of such experimental work will be to *change* the instrument into an even more effective psychodiagnostic technique or series of techniques. This, one feels, was the hope of the genius who devised the test.

It is the author's view that, up to the present, no fully adequate critical review of the work on the Rorschach Test has been written which takes into account both the behavioral and inferential types of criteria for validation. In writing about the instrument, biases are prominently displayed. The extent of the emotional disagreement among clinicians and among nonclinicians over the value of the test is quite remarkable. Many things might be said about what the test results should be able to predict and what the evidence is, at present, concerning its usefulness to the clinician and to the researcher into personality.

It appears to us that a great deal of the experimental evidence about the validity of the Rorschach Test is discouraging with respect to the large claims that have been made for it. On the other hand, this is not to say that we believe that the instrument is of no value to the clinical psychologist and that the interpretations of the skilled clinician from the Rorschach protocol are entirely without foundation. As it turns out, a careful examination of the data indicates that, for some tasks, the Rorschach appears to offer consistently useful data. In spite of all the controversy, the Rorschach is as good a projective instrument for observing certain aspects of personality as is any other test which is available to the clinician. This is why it has survived so much of the justified and unjustified criticism. However, the problem is that

its values and limitations are so confused amid claim and counterclaim that the beginning student is a victim of expertism and dogma.

It is unfortunate that some clinicians acclaim the test as the last word in diagnostic techniques and inveigh against any proposals to study the nature of the Rorschach response patterns and their interpretation with the purpose of culling the wheat from the chaff. In fact, it is typical for many Rorschach users to ignore, in practice, the sound experimental data which could be fruitfully applied toward the redesigning of the test or the alteration of the procedures of administration or interpretation. Moreover, it appears equally unforunate that emotions in the other direction have been so strong that experimental psychologists have generally been unwilling to give credit where credit is due, even when the evidence overwhelmingly supports the ability of clinicians to obtain significant information about the patient from the Rorschach record. But far more important than any particular diagnostic tool are the questions which led to the experimentation with ink blots. It is less important for the present and future clinical psychologist to have mastery over the Rorschach Test than it is for him to understand the problems which led to its application on the clinical situation.

Thematic Apperception Test. While the Rorschach Test has emphasized more of the formal or expressive aspects of the interpretation of ambiguous stimuli (the emphasis on the location and determinants of the responses rather than on content makes the Rorschach more formal in character), the TAT has achieved wide popularity as a technique for studying the content side of interpretation. Introduced in 1935 by Morgan and Murray, and later described and discussed by such writers as Bell (1948), Murray (1937, 1938, 1943), Murray and Bellak (1941), Kendig (1944), Rapaport, Gill, and Schafer (1945, 1946), Rosenzweig, Bundas, Lumry, and Davidson (1944), Rosenzweig with Kogan (1949), Schafer (1948), Symonds (1949), Tompkins (1947), White (1944), and others, it has competed with the Rorschach Test in clinical popularity. Most frequently it is used together with the Rorschach in the same battery of psychodiagnostic tests. One of its great virtues is that, aside from its usefulness as a source of information about the individual's problems, it has little of the cultism or religious fervor that surrounds the Rorschach Test.

Better than any other projective device, the TAT illustrates the theory of projective psychology. It has usually been described as a technique for studying fantasy as a product of conscious and unconscious needs. Murray, who pioneered the approach, considered psychogenic needs to be paramount in the understanding of personality. The reader will remember Murray's units of needs and press in the description of personality (1937). The technique of scoring and interpreting the test suggested by Murray follows this needs-press formulation.

The set of pictures which comprise the stimulus materials of the TAT were

taken mostly from magazine illustrations and include some drawings and paintings. All the pictures have been reproduced in black and white on cards. The standard set contains 30 such pictures, 10 for women, 10 for men, and 10 for both men and women (see Fig. 12). We shall illustrate a few of the pictures with the verbal descriptions given by Murray (1943). Each card contains a code which identifies whether it is appropriate for a man or boy, or girl or woman. The letters which stand for each of these, respectively, are *M, B, G, F*.

FIG. 12. An example of the Thematic Apperception Test stimulus cards. (From Murray, H. A. *Thematic Apperception Test.* Cambridge, Mass.: Harvard Univ. Press, 1943. By permission of the publishers.)

An example of a picture which is generally given to boys and men shows an adolescent boy looking straight out of the picture. The barrel of a rifle is visible at one side, and in the background is the dim scene of a surgical operation. One of the pictures shown to women and girls contains "a young

woman sitting on the edge of a sofa looking back over her shoulder at an older man with a pipe in his mouth who seems to be addressing her." Another picture given to men only shows "a young man lying on a couch with his eyes closed. Leaning over him is the gaunt form of an older man, his hand stretched out above the face of the reclining figure." An example of a picture given only to women and girls is one portraying "a woman with her hands squeezed around the throat of another woman whom she appears to be pushing backward across the banister of a stairway."

While the instructions to the subject vary somewhat with the situation, they usually direct the individual to tell a story about each one of the pictures. The subject is asked to explain the situation represented by the picture, discuss the events which led up to it, describe the thoughts and feelings of the characters in the picture, and tell what the outcome of the situation will be. If the subject neglects some or any of these features, he is prompted with questions about them. A typical procedure, recommended by Murray, is to require two sessions for the entire test.

Many variations have been possible with the procedure of administration and even with the types of pictures used. One typical modification is to reduce the number of pictures used in testing (Sarason and Rosenzweig, 1942). Others (Clark, 1944; Murray and Stein, 1943; and Rautman and Brower, 1945) have projected the pictures for group presentation with the subjects writing their stories instead of giving them orally. In studying adolescent fantasy, Symonds (1949) used his own series of pictures. Others like Balken and Vander Veer (1942, 1944) and Frenkel-Brunswik and Sanford (1945) have combined some of the TAT pictures with additional ones added for various experimental reasons. In the main, the clinical and experimental use of the TAT has involved procedures which have been quite fluid. Even the scoring and interpretation techniques have varied greatly among different users.

Murray (1937) himself has introduced one of the most frequently used types of scoring procedures for the TAT. Each story is analyzed in terms of five components, the hero, the hero's needs, the press, the thema, and the outcome. The hero represents the figure with whom the subject has identified. The needs and frustrations of the hero (and there may be more than one in a story) are, therefore, considered to reflect needs and frustrations which are apt to belong to the storyteller.

We have discussed Murray's primary and secondary needs in the chapter The Nature of Personality. This classification and listing of needs is applied by Murray to each of the TAT stories. Those needs which are revealed by the heroes in the stories are listed as part of the analysis of the TAT record.

Press in the TAT has the same implication that it has in Murray's theory of personality. It refers to those conditions or events which are identified as harmful or beneficial to the hero of the story. The press may be facilitating

or obstructing with respect to any of the hero's needs. These are also listed as in the case of the needs. Murray has provided a list of the most commonly found press. These closely parallel his list of needs.

A thema represents a simple episode which contains one need and one press. Each story contains at least one thema. In the broadest sense, a thema is similar to a plot in a story.

The outcomes in the TAT stories are described in terms of a continuum from very unpleasant to very pleasant. By weighting these descriptions from +2 to −2 Murray arrived at an "optimism index" which indicated the extent to which a subject's stories tended toward unhappy or happy endings.

Murray and others have suggested that, in addition to the kind of analysis summarized above, the TAT records should be treated in a manner similar to the psychoanalytic interpretation of dreams. An adequate analysis of a TAT record requires not too literal adherence to the behavioral side of the stories. For example, a subject may never state that elderly female figures represent mothers in his stories, but it is often possible to find close similarities (unrecognized by the storyteller) between the characteristics of the women described by the individual and his own mother. The psychologist may gain a great deal of understanding of the meaning of the stories if he is alert to the depth aspects of the TAT situations.

While a complete discussion of the interpretation of the TAT would (as with the Rorschach Test) involve more space than we can provide here, it may help to present some of the instructions about the interpretation of dynamic content which were prepared by White and Sanford (1941, pp. 8–10). Some examples of TAT interpretation will be presented in the last chapter describing the clinician in action.

> By the dynamic content of a story we mean the human situations and human motives which the subject, prompted by the picture, has imagined. In choosing the present test material the attempt was made to avoid unequivocal scenes, so that the dynamic content could always be regarded as a projection and as a function mainly of the subject's own mind. Just what kind of a function it is remains, of course, to be discovered. We have acted on the hypothesis that the need is father to the thought, that from the needs and situations appearing in the fantasies one can infer important strivings in the story-teller. Such inference is least dangerous when we are dealing with the needs displayed by the principal character or hero of each story; these we assume to be reflections of the subject's own needs. It would seem logical to suppose that the forces acting on the hero, the personal and impersonal press to which he is exposed, are in similar fashion reflections of the way the subject perceives his own environment. It is necessary to remember, however, that they may also represent what the subject wishes or fears might be present in his environment or might happen to him. With a small amount

of information about the story-teller it is usually possible to make a judgment about this matter. There is still a further possibility that the forces in the imagined environment represent needs of the subject which are in conflict with the other forces in his personality. The test provides an opportunity to externalize in dramatic form what is essentially an intrapsychic conflict. Thus in a story of crime followed by punishment it is sometimes very difficult to decide whether the hero is the criminal or the detective, both identifications having apparently been made. In short, conflicts in the story-teller may be represented by the opposition of forces in the story. Moreover, from the outcomes offered in fantasy we can sometimes deduce the subject's preferred solutions of intrapsychic conflict, a point which may be of decided value if therapy is to be undertaken.

Caution must be exercised in judging the importance of a particular plot. Morgan and Murray discovered with the aid of subsequent interviews that stories are derived from four main sources, (a) books and movies, (b) events in which a friend or relative participated, (c) the narrator's own experiences, objective and subjective, and (d) conscious and unconscious fantasies. We are inclined not to reject, as fortuitous, material from the first two sources, for we consider it always significant that the subject has remembered and selected a plot from what must almost always be a larger mass of experiences to which he has been exposed. Morgan and Murray believe that people have a tendency "to enjoy observing most and to remember best the external events which resemble their underlying fantasies." Nevertheless it seems advisable to attach greater importance to those plots which seem relatively free from external determination, about which the narrator remarks that they "came into his head" from he knows not where; these are the purer instances of projection.

One further problem must be indicated: we do not know from what level of the subject's mind the projections are made. Much of the content very likely springs from needs and perceptions which are perfectly conscious, but we have reason to believe that latent needs and unconscious perceptions furnish part of the material for any set of stories. It is possible to distinguish between the contributions of different levels only when the test is given to a subject whose manifest personality is already fairly well understood, so that discrepancies can be detected between this and the behavior of his fictional characters. Aggressive stories in an outwardly aggressive person come from a different level than aggressive stories in an overtly gentle person.

It should be pointed out that, in evaluating the importance of the hero's identifications, the stories' themes, and other projective material, particular attention must be given to the recurrence of this fantasy material throughout the test. A basic theme which continues to crop up in story after story

represents a reliable and often valuable clue to important dynamic material. Moreover, the interpreter must continually be alert to varieties of supporting evidence for his inferences such as signs of affect at particular points in the storytelling, side comments, the relationships between the TAT content and biographical information, and any other features which could help throw light on the meaning of the record. Successful TAT interpretation requires considerable knowledge of psychodynamic theory and great skill with projective material.

Sanford (1941, 1943) has followed the Murray formulations closely in his work with the TAT. Bellak (1942, 1944) has introduced some technique modifications. Masserman and Balken (1939) and Meadow (1944) have used the depth psychoanalytic approach. The former authors have also attempted a technique using objective criteria which might be applied to any TAT record in terms of their earlier experience with the formal analysis of the speech found in fantasy (Balken and Masserman, 1940). Harrison (1940 A and B, 1943), Rotter (1940, 1946), and Rapaport, Gill, and Schafer (1945, 1946) have emphasized formal characteristics (choice of words, modes of expression, organization of ideas, etc.) in the TAT as well as the content side of interpretation and have offered suggestions for dealing with the formal material. The great variety of approaches has been advantageous because of the flexibility it allows examiners in adopting the technique to their own needs. But it has also been a serious difficulty because it limits the accumulation of norms and the comparison of the data from one investigation with another.

The study of the validity of the TAT offers tremendous problems. In many ways these problems are not very different from the problems which have arisen with the Rorschach Test. Validation is particularly tricky because the TAT is, even more than the Rorschach, designed to get at hidden variables like needs which can be observed only indirectly. A number of general ways to study the test's validity have been described. The kind of approach one uses depends upon how the problem is defined. One of the earliest approaches to TAT validity was to compare evaluations from TAT records with personality sketches obtained from other clinical sources like autobiographies, interviews, and tests. This technique has been used by Morgan and Murray (1935), Sarason (1944), and others.

Other workers have made use of a matching technique in which trained clinicians are asked to match TAT records with other clinical specimens and study the percentage of agreement. Harrison (1940 A and B), Slutz (1941), and others have used this kind of approach.

In addition to the above approaches to the study of validity, clinical diagnosis has been used as a criterion against which to compare TAT analysis (Balken and Masserman, 1940; Masserman and Balken, 1938, 1939; Rapaport, Gill, and Schafer, 1945, 1946).

Finally, it has been possible to vary experimental conditions of administration and observe (or predict) the effect this variation will have upon TAT performance or to use TAT stories to predict some behavior pattern. While not often used (it has been more popular in Rorschach studies), Bellak (1942, 1944) and White (1937) have been able to employ it successfully.

As with the Rorschach Test, so many problems exist regarding validity, techniques of administration and scoring, and reliability that it is impossible to present them all in so short a space as we can afford here. Bell (1948) and Symonds (1949), to mention only a few, have discussed a large number of these problems and reviewed the work done on them. More research is badly needed on the diagnostic possibilities and limitations of the instrument. Of particular importance is the problem of the stimulus value of the pictures, since it is important to know what to expect from most people by way of mood and type of story. Rosenzweig (1949) has discussed this problem, and recognition of its importance has been growing. For example, Eron, Terry, and Callahan (1950) have shown that the TAT pictures have definite stimulus values of their own with respect to the mood of the elicited story. The same reasoning has been applied to other projective tests in articles by Sanderson (1951), using the Rorschach, and Andrew, Walton, Hartwell, and Hutt (1951) with the Michigan Picture Test. In the main, the studies which have been done with the TAT have produced some encouraging results. There is every indication that an instrument of this kind, perhaps with major modifications over its present form and greatly expanded information along normative lines, will offer the clinical psychologist great rewards in psychodiagnostic information.

Szondi Test. Growing out of the recent intense interest in projective measurement is a test originated by a Hungarian psychologist by the name of Lipot Szondi (1937, 1940). The test was introduced into this country by Rapaport (1941), and perhaps because of the unavailability of the materials during the war, it was not really taken up until about 1946. At this time Susan Deri (1946) began to publish on the technique. The past few years have seen rising interest in the Szondi Test, and current clinical journals are beginning to feature an occasional experimental article on it. The Szondi Test is still not well known and is only infrequently used in the clinic. Little information is available about it. This lack of background and evidence that the test is worthy of application has not deterred a number of clinical psychologists from becoming Szondi enthusiasts. More conservative psychologists are waiting for sound evidence that the technique has enough value to warrant attention.

The test consists of 6 sets of 48 photographs of faces of patients in European mental hospitals. Each set contains the face of an epileptic, a hysteric, a catatonic, paranoiac, a homosexual, a sadistic murderer, a depressive, and a manic. The subject must select, among each 6 sets, the 2 pictures he likes

best and the pictures he most dislikes. These choices are recorded on a profile chart in accordance with the diagnosis of the patients whose pictures were selected as either most liked or most disliked. Procedures have varied concerning the number of times the subject must go through the set. Most usage involves a number of repetitions of this procedure.

Although Szondi has not published much in the way of data concerning his test, he has worked out an elaborate scheme for its interpretation. In essence (and this remains the basis of interpretation of the test today), positive choices in any one category of patients indicate latent tendencies toward that particular personality pattern. Few choices, or no choices (whether positive or negative), in a category indicate that the tendency is overt. The dislikes represent rejected, sublimated, or repressed tendencies. A large number of choices of any kind indicates that the tendency is close to the surface, that is, accepted by the individual's superego, and is nearly manifest.

Susan Deri (1949) has recently published a book which describes and discusses the Szondi Test but which is wholly lacking in research confirmation. In talking about the theoretical side of the instrument, she has rejected Szondi's outmoded genetic theories of personality. Despite this desire for a more adequate rationale, no satisfactory one has been given, nor is there any real evidence that the test measures any presently meaningful personality characteristic. All that has been suggested by experimental study, to date, is that the preferences exhibited by a subject are beyond chance expectancy, that is, they apparently mean something. But what is indicated by the pattern of choices is certainly not clear.

Experiments with the Szondi Test have been done recently by Rabin (1950) on the ability of people to correctly diagnose Szondi's patients; Guertin (1950) studied the consistency of selections; and Fosberg (1951) has done the best job of analyzing experimentally some of the Szondi assumptions. The amount of data on the test has been increasing. In general, however, the results have not been particularly favorable. The faces used in the test are certainly an unpleasant batch, to say the least, particularly because the photography is so poor and the heavy beards and hair styles are very much out of date. It is difficult to foresee what will become of this latest clinical fad in view of its dim rationale and limited potential value. But if competent research should indicate that we are wrong and the Szondi material can really be used effectively, then much more must be said than we have said here.

Picture-Frustration Test. This clever instrument was designed by Rosenzweig as an outgrowth of some of his theoretical explorations into the nature of aggressive reactions to frustration (Rosenzweig, 1945, 1944, 1938, 1935, 1934; and Sarason and Rosenzweig, 1942). While the instrument has limited usefulness and has been incompletely explored, it is an interesting device which should be known to clinical psychologists.

The test is simple in design and administration. It consists of 24 cartoons containing at least 2 figures. One of the persons in the cartoon is saying something which describes some kind of frustration for the other person involved. The statement may accuse the second individual of social failure or inconsideration, or may indicate some form of thwarting. A blank enclosed area is supplied for the frustrated person to say something (see Fig. 13). The subject taking the test is required to write down in this blank space the first reply that comes into his mind. The test may therefore be administered either individually or in a group, although the former is probably preferred.
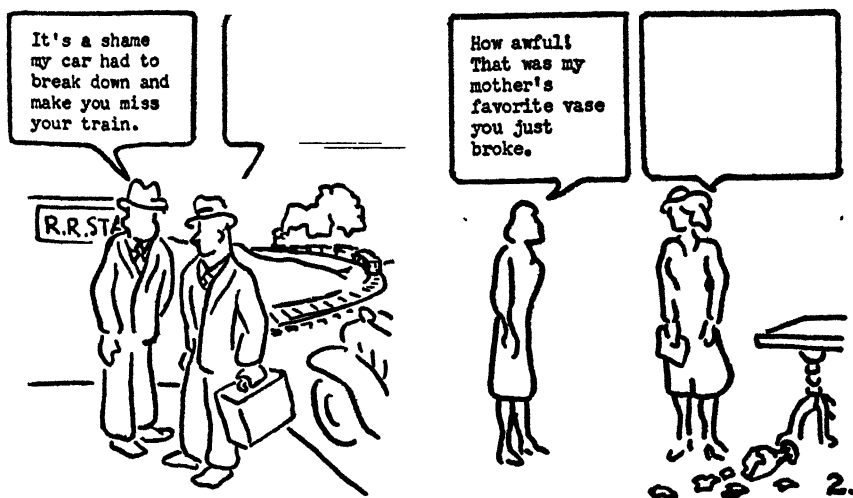
FIG. 13. Examples of items in the Rosenzweig Picture-Frustration Test. (Reproduced with permission from the Rosenzweig Picture-Frustration Study. Copyright, 1948.)

Each response may be scored in two ways, in terms of the direction of aggression and in terms of the type of reaction to frustration. The blame may be directed toward others or the environment (extrapunitive), toward oneself (intropunitive), or it may be evaded by attempting to gloss over or mask the frustration in some way (impunitive). The type of reaction may involve ego defense (protection of self-esteem predominates in the response), need persistence (emphasis in the reply is placed upon the reduction of the frustrating tension by removing the barrier or solving the problem), or obstacle dominance (concern is shown for the source of the frustration).

Records are scored in accordance with the degree of extrapunitiveness, intropunitiveness, and impunitiveness, and obstacle dominance, ego defense, and need persistence found for the subject. These ratings may be compared with norms provided by the author. The degree to which the subject conforms

to these norms on 12 of the most discriminative items is called the "group conformity rating."

Up to the present time, the norms which have been collected (mostly by Rosenzweig, Fleming, and Clarke, 1947; and Rosenzweig, 1950B) have been inadequate. Moreover, although a number of studies have recently appeared with the test, there is still little evidence that it really does measure the direction of aggression which is characteristic of an individual. Some indirectly positive data have been obtained by Sarason and Rosenzweig (1942), Rosenzweig and Mirmow (1950), and French (1950). Indirectly negative findings were reported by Franklin and Brozek (1949). The major problem of validation of the Picture-Frustration Test is somewhat similar to any pencil-and-paper test. The meaning of the items is rather obvious to any intelligent individual (fairly high literacy is required also), and the test is, therefore, vulnerable to falsification or unconscious compensatory reactions.

For example, it is entirely possible that a negative correlation could be found under some circumstances between extrapunitive scores and the actual degree of aggressive behavior found in an individual. A person who tends to be overly aggressive may be ashamed or guilty about this (or may even fail to recognize it) and may attempt to compensate for it by answering the items in socially acceptable ways. On the other hand, a Caspar Milquetoast could have strong motives to appear to himself and to others as a virile man who would fight if attacked. People who practice staircase fantasies (that is, think to themselves on the way home from a party about all the things they might have, and wished they had, said to the insulting coguest) might easily react with extreme aggression to the Picture-Frustration situations on paper but would never in real life respond in that way. Moreover, some of the subject's reactions may depend heavily on the specific frustrating situations. The remoteness of some of the cartoons to which the person must respond may greatly increase the errors of measurement. Whether this analysis is correct or not cannot be clear at the present time because there have not yet been many satisfactory validity studies with the Picture-Frustration test.

Other Visual Situations. The description of the Rorschach, TAT, Szondi, and P-F tests do not exhaust the possibilities for projective stimuli of the visual type. In fact, some other variations exist although they are very infrequently used. For example, just as we found story and sentence completions among the verbal projective techniques, we find picture completion among the visual projective stimuli. Hellersberg (1945) adapted an art-aptitude test devised by Horn and suggested that it might be used to get at personality variables. It involves completing a picture which is presented to the subject as a number of lines taken from internationally famous paintings. Hellersberg has pointed out some of the developmental aspects of children's adaptation to the test situation using subjects ranging from 2 years of age to adulthood. The technique has not been developed very far.

A new test by Blum (1949) called the Blacky Test appears to have some promise for use with children. It was based upon the psychoanalytic notions about psychosexual development and consists of a series of puppy pictures representing common psychosexual problems. The test has much in common with the TAT in the sense that the children's stories about the pictures are used to get at personality dynamics. As yet there has been too little research with the technique to comment upon its usefulness in the diagnosis of child problems. It is, however, another illustration of the wealth of ideas which have been stimulated by projective psychology.

Perceptual Recognition. There are some interesting indications in the literature that the use of perceptual-recognition situations in which the threshold or accuracy of recognition of various emotional scenes or stimuli, as well as the prerecognition guesses of a subject, may be an exceedingly useful technique for getting diagnostic information. If a person fails to recognize what other people agree is there, this observation has interesting diagnostic implications. It may be possible to identify the needs and defense mechanisms of an individual by noting what kinds of emotional stimuli are distorted by him and in what direction. For example, a patient who is consumed with powerful hostilities toward others but who is unable to accept these asocial attitudes may, when confronted with aggressive stimuli, fail to perceive them for a long time. Eriksen (1951A) presented a group of patients with pictures such as two men attacking each other with knives, and so on. These were exposed in a tachistoscope at very rapid speeds, and the patient was asked to describe the picture. Patients who were experiencing emotional difficulty with hostile impulses frequently took much longer to recognize these pictures than they should have by virtue of their recognition of neutral pictures. Interesting distortions of the scenes were sometimes found. For example, one patient saw the two knives in the hands of the men as being heavy baseball gloves, thereby reducing some of the threat implied by aggressive weapons.

In the case of patients with powerful aggressive needs which are accepted or recognized, the perceptual distortion may operate in the other direction. Instead of defending themselves against the anxiety-producing material by avoiding it, some patients presumably are ready to see even neutral stimuli as aggressive or sexual in nature. Postman *et al.* (1948) have given the term "perceptual defense" to the former tendency and "perceptual sensitization" to the latter reaction. While the work of tying together perceptual behavior with clinical needs and mechanisms is just beginning, there are signs that clinical diagnosis may be considerably sharpened by the use of perceptual recognition tests. The use of real material (as opposed to ink blots, etc.) in the form of sentences, phrases, or pictures presented auditorily (as done by Lazarus, Eriksen, and Fonda, 1951) or visually (Eriksen, 1951A) and scored in terms of perceptual accuracy as well as projectively may be an exceedingly

fruitful technique of obtaining clinical information. It has the virtue of forcing upon a person threatening material which can be avoided or distorted in accordance with a person's needs and ways of dealing with them.

Moreover, psychologists like Klein and Schlesinger (1949) have suggested that various other modes of perceiving are related to personality characteristics. Frenkel-Brunswik (1949) has used social situations as perceptual stimuli with which to study the personality variable which she has called "intolerance of ambiguity." All this perceptual activity has originated from the developing recognition by psychologists that personality is reflected in the ways people perceive. The parallel between this perceptual approach and the more traditional projective approach to personality study should by now be very clear to the reader.

Techniques Involving Creative Activities. In addition to the use of pictures and verbal materials, a number of techniques have been devised which make use of art forms of various kinds like drawing, finger painting, puppetry, drama, block building, and manipulation of toy objects.

Many of these tests are relatively new to the field, and, therefore, few research data are available for them. The task of the subject is to create or reproduce some pattern with the stimulus materials. Usually a record is made of the subject's verbalizations during the period of construction. In many instances, the subject must tell a story about the production or explain it and associate to it. Some of the tests are designed primarily for children, such as the World Test. Others were developed for adults but could easily be adapted for children as well.

In this section we shall not attempt to describe in detail all the creative-type projective techniques. We shall, however, say a few words about each. The instruments which we have classed under this heading are the World Test, the Mosaic Test, the HTP Test, the MAPS Test, the various informal play approaches, and psychodrama.

World Test. This technique was introduced by Lowenfeld in 1939. More recently Buhler and Kelley (1941) have published standardized test materials, a manual, and record blanks for the test. The World Test is intended for use with children between the ages of 4 and 11. It has been used, however, with adults (Bolgar and Fischer, 1947; Michael and Buhler, 1945; and Dubin, 1940). Essentially, it is a kind of play technique.

The materials consist of a box of 150 miniature objects which can be used in the construction of a farm, town, zoo, or other social situations which the subject may prefer to build. The child is simply asked to construct anything he desires out of the houses, trees, cars, people, animals, etc. Generally, the child is allowed to play with the materials for about 20 minutes. A careful record is made by the examiner of the child's constructions, his behavior, the choices of objects which he makes, the verbal comments, and any other details of importance that are observed during the session. Lowenfeld has recom-

mended the use of photographs to record the position of the objects which the child has used. Sometimes the examiner may question the subject about the "world" he has built with the materials.

A number of outlines have been made concerning the method of scoring and evaluating the results of the World Test. Bolgar and Fischer (1947) have developed their own complete scoring system. Six aspects of the world are evaluated: the order of choices; the number and variety of items used and the amount of space required to build the world; the general form which is related to interest in practical life experiences, logical relationships between items, interest in people and their activities, interest in nature, and emphasis on the artistic or aesthetic aspects; the contents, that is, items used or ignored; the subject's behavior; and the verbalizations during construction.

Michael and Buhler (1945) have classified the worlds of adult subjects in terms of six types: aggressive, unpopulated, empty (less than 50 items, indicating lack of interest or imagination), closed (surrounded by fences, fearful, or hostile), disorganized, and rigid. This system of classification has been found to be useful by a number of clinical psychologists. Rosenzweig and Kogan (1949) have recommended this type of treatment in their brief survey of the test. They describe this kind of classification as a form of sign approach, that is, one examines the record for signs of aggressive content, rigidity, etc.

The interpretation of the World Test depends upon norms derived from normal and maladjusted children, for example, in terms of the frequency of appearance of signs of personality disturbance. According to Rosenzweig and Kogan (1949), particular combinations of signs of the test suggest different kinds of maladjustments. Qualitative interpretations may be made also in an effort to throw light upon the child's emotional problems. At the present time relatively little work has been done with the technique. Its clinical use has been limited, partly because of its newness. The norms which are available are not yet adequate. While the few studies which have been concerned with the test's validity have produced some encouraging material (Dubin, 1940; and Bolgar and Fischer, 1947), validation research is still badly needed. For certain types of usage the technique appears to offer some promise as an additional source of projective information.

Mosaic Test. Like the Rorschach Test, the Lowenfeld Mosaic Test (1931) attempts primarily to get at the expressive aspects of projective behavior rather than the projective or content aspects. The test has been popular in British clinics, although it is sometimes found in American clinics as well. The materials contain 465 small wooden forms in six colors: black, white, red, blue, green, and yellow. There are five different shapes: squares, diamonds, right triangles, isosceles triangles, and scalene triangles. The instructions for the test are usually to make anything the subject likes out of the pieces. Often the examiner questions the subject about his constructions,

such as, "What does it represent?", "Do you like it?", etc. An exact record is made of the design which the subject produces.

Various workers have described somewhat different techniques of describing and evaluating the results of the test. Himmelweit and Eysenck (1945) noted the order in which the colors are introduced, the method of construction, and the patient's behavior during the test. They also obtained answers to three questions: (1) Had the subject planned the pattern beforehand? (2) What suggested the pattern? (3) Was the subject satisfied with the results?

Diamond and Schmale (1944) have noted such things as the attitude of the subjects, the method of selection of the pieces, the manner of construction, patterns which are made and then rejected, and verbalizations. They also rated subjects on the ease of ideas, cooperation, concentration, anxiety, care, persistence, manner of completion, and satisfaction with the results. In analyzing their data, they have distinguished normal patterns, mildly defective patterns, moderately defective patterns, severely defective patterns, and unclassified mosaics. This scale was based primarily on the degree of organization of the patterns created by the subject. A still different type of analysis has been suggested by Kerr (1939).

Other variables in the test situation that may be noted by the clinician are the number of designs, the coherence of the designs, concreteness or abstractness, harmony, repetition, emphasis on form or color, and a large variety of other behaviors and variations. These patterns of behavior are usually compared with those found among normal populations and among various psychotic and psychoneurotic groups. As in the case of the World Test, signs which differentiate clinical types are sought.

Like a great many of the projective techniques, little work has been done on the Mosaic Test. Not much can be said at the present time concerning the validity or usefulness of the technique. The reliability of the test as measured by Himmelweit and Eysenck (1945) was found to be low. These authors also obtained validity data, based upon a matching technique, which were not particularly encouraging. On the other hand, Wertham and Golden (1941), using blind interpretations, claim that the test satisfactorily distinguishes between various personality disorders. Wertham (1950) also claims to be able to distinguish normals from schizophrenics with great accuracy. This, of course, need not be a remarkable feat depending upon the sample of schizophrenics used and the criterion of diagnosis. In discussing the test, Wertham proceeds to describe patterns which are characteristic of normals, schizophrenics, organics, mental deficients, manics, depressives, psychopaths, and psychoneurotics. He presents no data, however, to substantiate his statements. Some clinicians have been using the technique as an aid to differential diagnosis. However, too little information is available about the test to draw any immediate conclusions concerning its value.

Other Creative Techniques. We have described the World Test and the Mosaic Test to illustrate the kinds of techniques which are becoming increasingly popular as projective situations in recent years. The list of techniques seems to be lengthening rapidly. A number of other procedures requiring creative activities which we have not yet mentioned have been known for some time. Some new ones have been recently developed by clinical psychologists. The similarities in theory and practice between them are far greater than the superficial differences in stimulus materials and the exact techniques of scoring. For example, the *Make-A-Picture-Story (MAPS) Test,* introduced by Shneidman (1947), combines some of the features of the World Test and the TAT. It comprises a series of 27 backgrounds into which any number of 67 human figures may be inserted The backgrounds include typical situations in which people might be found: household rooms, dream clouds, forests, etc. The people available include old folk, young people, males, females, etc. In putting these pieces together, the subject tells a story about them.

Buck (1948) has introduced a projective device called the *House-Tree-Person (HTP) Test.* The basic procedure involves requesting the subject to draw successively, a house, a tree, and a person and to answer a series of 64 questions concerning these productions. The administrative procedures, scoring, and interpretative techniques are set forth in a recent manual (Buck, 1948).

The use of drawings or paintings of some sort as projective situations has been known for some time. The HTP Test appears to be an extension of the procedure which requires the subject to *draw a human figure.* This procedure was first used by Goodenough (1926) as a convenient means of estimating a child's intelligence. It was later adapted for clinical diagnosis on the basis of the observation that the individual differences in people's drawings seemed to be related to various personality and diagnostic features (see Fig. 14). Machover (1948) has evolved a complete scoring and interpretative system for the draw-a-person technique, and it has become a frequently used projective device in many clinics. In addition to these drawing tests, finger paints have also been used projectively. Moreover, Harrower (1950) has had subjects draw the most unpleasant situation which they would recall and to associate to it (the *Most Unpleasant Concept Test*).

Related to drawing are other play techniques which have been used and studied for a good many years. The use of *modeling clay* has been prominent. *Puppets* have been used in which the individual either participates directly or reacts to the enactment (on a puppet stage) of various themes of conflict between good and evil, sibling rivalry, etc. One of the earliest uses of *dolls* to study rivalry between siblings and other sources of tension in children was the famous Levy (1937) amputation doll technique. Although usually thought of as a technique of therapy, Moreno's *psychodrama* (discussed in

FIG. 14. An example of the clinical use of the draw-a-figure test. The drawing was made by an 18-year-old female patient who was believed to be confused about her sexual role. The drawing clearly indicated that distinction between male and female is difficult for her. She began drawing the head and made the comment, "I wanted to draw a lady but when I put the ears on it looks like a man. When I want to make a lady it comes out a man, and when I want to make a man it comes out a lady." To distinguish the man she had to try to make him seem tall and powerful, put hair on his chest, give him a uniform, and she commented upon all of these points as she drew. Even then she failed completely, for in her own words "he turned out to be a little boy playing sailor," and all of his sexuality was denied him.

a later chapter on special psychotherapies) or any adaptation of it may be thought of as a projective technique which has diagnostic usefulness in the hands of a skilled interpreter.

It should be clear to the reader that there is virtually no limit to the variety of projective-test situations which might be classed under the heading of creative activities. The list we have already made is by no means complete, and it is growing. We have not discussed the Harris (1948) Bas-relief Test which is an attempt to extend the Rorschach type of situation into the tactual field for use with blind patients, or the Twitchell-Allen Three-dimensional Apperception Test (1948) which employs a group of ambiguous plastic forms which are introduced by the examiner in a series of dramatizations. There are still more, and the list is growing.

Techniques Studying Expressive Movements. In addition to the classes of projective tests which we have already discussed, there exists a group of techniques which can best be described as expressive in nature. These techniques call for analysis of handwriting, expressive movements, studying style and accuracy in copying various forms, and the analysis of a person's speech and voice characteristics. In all these tests the content of a person's performance is less important than his style of execution. As a group these approaches have been classed under the heading of expressive movements. They are generally based upon the belief that a person's habits of gesture, writing style, movement, etc., are fairly stable characteristics of the individual which may be used as cues to underlying personality variables. A number of psychologists like Wolff (1943) have argued that these styles may be used to predict certain temperamental, and often unconscious, aspects of personality. Some of the techniques in this class, like the Bender Gestalt Test, are based on purely empirical findings with respect to the way in which various psychotic groups and normal subjects copy figures. Others, as in the case of handwriting analysis, are based on questionable rationale and are of very doubtful validity.

In general, this expressive approach to personality measurement has not gained wide acceptance among psychologists. Many psychologists look upon these tests as similar to prescientific astrology and phrenology. The two main techniques which may be identified under the heading of expressive movements are: the Mira Myokinetic Psycho-diagnosis and the Bender Visual-Motor Gestalt Test. Let us briefly examine the problem of expressive movements in general.

Interest in expressive movements preceded any attempt at relating them in a practical way to personality characteristics. The major work in this area has been done by Allport and Vernon (1933), Wolff (1933, 1935, 1942, 1943, 1945A, 1946), and Arnheim (1928). Two major approaches to the problem stand out in the work of Allport and Vernon and of Wolff. In the former case the experiments revolved primarily around the measurement of

the consistency with which a person performed a variety of motor tasks like reading aloud, walking, drawing circles, estimating distances, finger tapping, writing, and a series of other similar activities. Measures were made of such things as speed, writing pressure, length of walking strides, etc.

In general, Allport and Vernon obtained fairly high reliability in the separate measures from trial to trial. Moreover, they presented evidence for interrelationships between some of the general characteristics of motor acts. The authors comment in summary, "It is surely not unreasonable to assume that insofar as personality is organized, expressive movement is harmonious and self-consistent, and insofar as personality is unintegrated, expressive movement is self-contradictory." In any case, we may go along with the idea that there is some consistency to the individual differences found in certain expressive movements and even evidence that interrelationships exist between some of the different motor activities like amount of area taken up by subjects, emphasis in movement, etc. Say Allport and Vernon, "There is obviously neither complete generality, nor complete specificity."

The other general approach was developed by Wolff (previously cited) who attempted to obtain judges' characterizations of people using samples of expressive movements. The judge was asked to say something about the person's vitality, restraint, sociability, intelligence, health, outlook upon the world, optimism, sex, age, etc. In addition Wolff had the judges evaluate their own expressions as well, without knowing it.

It is difficult to evaluate Wolff's findings, since adequate statistical tests of significance were not used. Wolff reported great consistency among the judges in their evaluations of different people and in the judgments of one judge on several items for the same individual. One of Wolff's most interesting findings suggested that judges would frequently fail to recognize their own expression, would often show different behavior in rating their own materials (judges would display emotion, fatigue, greater detail, etc.), and would often be in much greater disagreement with the other judges than usual. Wolff concluded that here was an unconscious emotional involvement in characterizing one's own personality which had important implications. In addition to these kinds of studies, Wolff performed a large series of investigations upon character descriptions from various facial stimuli (following somewhat in the steps of Arnheim) and noting differences in the expressiveness of the two profiles.

Wolff later applied his experimental material and ideas to the problem of personality diagnosis (1942, 1946). Pictures of children were obtained during routine medical examinations showing them sitting, standing in various poses, etc. In addition moving pictures of the children's behavior were made available. Judgments were then made of impetuosity, concentration, attentiveness, persistence, distractibility, fatigue, energy characteristics, and rhythm. He concluded that consistency of expression varied from person to

person and that such patterns could be of value, following further research, in personality evaluation.

Some of Wolff's findings concerning the judgments of personality from photographs are supported by some experiments and refuted by others. Work has been done also with the analysis of handwriting While much of this type of investigation has not been considered respectable by many American psychologists, some of it is suggestive of real value. A great deal remains to be done before the field of expressive movements could become a useful kind of approach to the study of personality characteristics. Even though there seems to be some substance to it, it is probable that much more is claimed for expressive movements than will ever be realized. For other discussions of the work in this field, the reader should consult Bell (1948) or some of the direct sources themselves.

In the sections which follow, we shall briefly sketch two of the main projective tools which rely on the concepts of the expressive-movement field and which we listed earlier in this section.

Mira Myokinetic Psychodiagnostic Test. Combining some of the aspects of graphology and muscular movement, Mira (1940) has introduced what he called the "myokinetic technique" of psychodiagnosis. It is based upon a theory of unconsciously willed movements which are presumed to be related to the expressive aspects of personality and to clinical types.

The test materials consist of a table, a chair, wooden board, three pencils, drawing pins, paper, and a blindfold of some kind. The blindfolded subject is required to draw some lines of various kinds on the board which sits directly in front of him. In the first part of the test, the subject draws 10 horizontal lines which should be of the same length, parallel, and as close to one another as possible. Having completed this, the subject is required to draw 10 similar lines in the opposite direction, then shift to the left hand and repeat the process. Following this, the subject draws lines in the vertical plane, 2 inches in length, 10 upward and 10 in a downward direction. In part two of the test, the subject formerly was asked to draw a series of more complicated patterns, a zigzag chain, staircase, and the top of a castle. Recently some changes have been made in the figures Mira uses. For example, the top of the castle is no longer used.

Various quantitative data are obtained from the Mira technique, including measurements of the absolute and relative length of different combinations of lines, which are determined by a series of simple arithmetical formulas. These patterns which are scored include such measures as the absolute variation and relative variation in length, the direction and amount of shift from the first line drawn, etc. Qualitative data consist of such information as the straightness of the lines and their regularity.

In developing his test, Mira reported results with 144 cases which included normals, epileptics, schizophrenics, obsessives, depressives, psychopaths,

manics, and organics. Norms are therefore presented for these various clinical groups. Although the differences found between groups are claimed to be reliable, full-scale evidence along these lines remains to be obtained. Some of the patterns associated with clinical groups of patients are certainly suggestive and, in many instances, fit what is known about these kinds of illnesses. For example, depressives draw shorter lines than elated patients. Schizophrenics tend to lose the direction of the initial movement or even reverse this movement.

However, it is difficult for the authors to be much impressed with the extent of such a contribution, particularly in view of the great individual differences within the diagnostic groups and the minimal differences found between diagnostic groups. Moreover, statements may be found in Bell (1948) to the effect that "evidence is strong, though not conclusive, that the left hand is more related to constitutional trends in the personality, and the right hand to what is actually present in the mind." It is difficult to tell whether Bell really accepts this statement as meaningful or not. However, such a statement, in the light of what is known, does not enhance the status of clinical approaches to personality measurement and theory either among the sciences or among thoughtful psychologists.

In general it may be said that Mira has produced a series of concepts which cannot be fitted into our typical psychological theories, nor are they readily testable. Aside from its obscure rationale, there is little present evidence that the technique of myokinetic psychodiagnosis will prove valuable in the clinic despite the small differences, in Mira's data, between certain clinical types of patents. So little is presently known about the technique and the meaning of the results that this instrument can hardly be considered as part of the clinician's battery at the present time. We must adopt a wait-and-see policy until interested clinicians provide the hard labor which is necessary to validate any test.

Bender Visual-Motor Gestalt Test. Several tests have been designed which make use primarily of the expressive aspects of drawing. Wolff (1942), Buhler (1938), and Wechsler and Hartogs (1945) have suggested adaptations of existing tests or have introduced new techniques for studying the expressive side of personality through drawing.

We might pause an instant here to point out that our classification of projective tests is merely one of convenience, and there are a number of instances where we have classified a test which might just as easily have been placed in a different category. For example, the drawing of the human figure technique or the House-Tree-Person Test might, with some justification, be placed in the expressive-movements category. A good deal of their interpretation depends upon motor expression. However, these tests are more largely projective than expressive in nature and emphasize content and creativity more than anything else. The expressive tests require little creativity on the

part of the subject. Most of the variability in performance can be described in terms of the styles used in copying figures, writing, etc.

The Bender Visual-Motor Gestalt Test (1938) is the best known and most well developed of the techniques which require subjects to copy various kinds of figures. The figures which Bender used were originally suggested by Wertheimer (1923) for the study of theoretical perceptual problems from the gestalt point of view. The figures which Bender used are shown in Fig. 15. The administration of the test merely requires that the subject reproduce these designs after a brief exposure. Evaluation of the drawings depends upon the movements made in drawing (*e.g.*, speed, rhythm, direction, etc.), the characteristics of the drawings in terms of the perceptions which are implied by them and their formal characteristics (*e.g.*, sharp or hazy outline, degree of accuracy, special orientation, etc.), and the behavior associated with the copying which may include free associations during the drawing or to the designs and the evidence of approval or disapproval of the figures drawn.

The main interpretative data which grow out of Bender's studies depend upon norms or typical patterns found with various clinical groups and with children of various ages. Special characteristics have been found in mentally defective individuals, organic patients, schizophrenics, and depressive and manic patients. Attempts have been made to use the test with neurotics, but the most adequate use seems to be in differentiating between the various psychoses.

As with most of the other tests which we have discussed, the Bender Gestalt Test suffers from a general lack of evidence concerning reliability, validity, and inadequate norms. The test is rather frequently used in the clinical situation, since it is simple to administer, and the reports have been somewhat favorable. However, very little has been published concerning the technique, and in some instances wholly unsubstantiated and probably exaggerated claims have been made for it. Since it is easy to give, it is apt to be of value as a supplementary source of information about the perceptual and motor side of patients' psychological or organic disturbances. It may be, therefore, a potentially useful additional tool in differential diagnosis and research.

An Evaluation of the Projective Field. Clinical psychologists and personologists are in general agreement today that the projective approach to personality evaluation offers excellent possibilities in the study of an individual's motivational patterns, sources of tension, and ways of dealing with conflicts. This approach is clearly a contribution of the depth psychologists who choose to understand behavior in terms of complex motivations (many of which are considered to be unconscious) and ego mechanisms (which serve to protect the individual's self-esteem by selecting which impulses or needs will be allowed direct expression and which motives will be completely inhibited or given expression only in a disguised fashon). In projective tests the behavior which is observed is mostly the source of inferences about more underlying
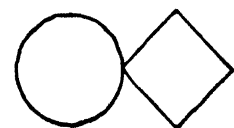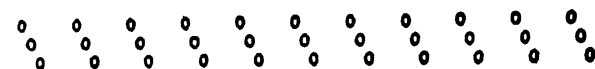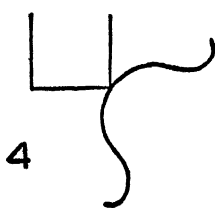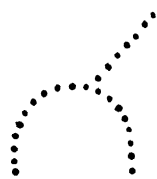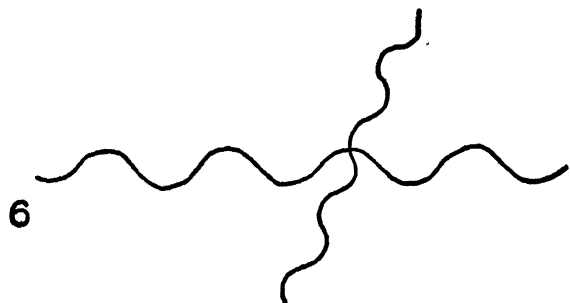
FIG. 15. The Wertheimer figures used in the Bender Visual-Motor Gestalt Test. (From Bender, Lauretta. *Instructions for the use of the Visual Motor Gestalt Test.* New York: Amer. Orthopsychiatric Assn., Inc., 1946. P. 4. By permission of the publishers.)

processes. However, projective-test data may also be used behaviorially when empirical findings make it possible to relate test behavior to observable behavior patterns in everyday life or to clinical symptomatology.

Whether projective-test situations are employed in their depth sense or in a behavioral manner, certain requirements must be met to justify their use. By now there should have emerged for the reader some understanding of what these requirements are and how well they have been so far met by the projective tests available. The most damning criticism of this field is not that its tools are shabby or inadequate but that their adequacy is really not known There has been too much laziness in the activities of test creators and users in terms of obtaining appropriate norms for their instruments. There has been too much of a tendency to assume that the tests measure what they are intended to, without any real information about their validity. There has been too little willingness to experiment with and modify techniques which have been accepted as tried and true. If one asks this most basic question, "How valid is your test?" (a question which everyone agrees is always appropriate for any test), subjective impressions are generally forthcoming. Equivocal data are most often the rule when any information is available at all about reliability or validity. In some instances the posing of this question is apt to produce the reaction that one is unsympathetic or hostile to the field. Resort is continuously made to the claim that this is an art which some folks have and others have not. It is a little like the often heard statement that, to understand behavior, it is essential to be psychoanalyzed. All this kind of double talk does not help the area of clinical or projective psychology. It certainly prevents progress from being made toward the sharpening of our tools and the discarding of what is simply excess baggage.

While the almost unlimited expansion of the number and kind of projective stimuli which is occurring nowadays appears to please a great many clinicians, it is difficult for the present authors to see how it actually helps the work of the clinical psychologist. It seems to us that the point of diminishing returns has long since been reached with respect to new materials. Those workers who have introduced the new techniques have appeared to have a striking disregard for the enormous labor which is required to standardize and work out a new test. The revised Stanford-Binet took ten years or research to develop and standardize. In most of these new techniques, there has been little and often virtually no publication of any information which would substantiate the value of the approach. The Twitchell-Allen Three-dimensional Apperception Test is a case in point, since virtually no data or results with the test have been published. Nevertheless the author has published a manual for its use.

It seems to be fashionable nowadays to ignore the basic testing questions of validity, reliability, and standardization in projective-test construction. This is sometimes excused on the grounds that projective tools are not subject to the same rules as any other measuring devices. This is by no means true.

The fact remains that at the present time the clinician is presented with an assortment of dozens of tests about which practically no one knows anything. It is no surprise that the Rorschach and TAT remain the most frequently found. Whether we know enough about them or not, there has been a great deal of study with them which provides at least tentative guides for administration, scoring, and interpretation.

There are a number of ways of determining the validity of a test such as the Rorschach or TAT. The easiest ways are usually the least adequate because they tend to deal with the most superficial or least important aspects of the test or tend to obtain evidence which has only limited usefulness. For example, there is little doubt at the present time that Rorschach examiners are able to successfully match protocols with short personality sketches. An examiner who is handed the Rorschach records and personality sketches of five or so people without any identification is able with an impressive degree of accuracy to put the correct Rorschach record with the appropriate personality sketch (Krugman, 1942). This certainly indicates a certain amount of validity in the techniques. However, the problem remains as to what cues the examiner used to make his match. A correct matching is theoretically possible with one or two characteristics, even though all the other interpretations were quite false. The problem then becomes one of determining what aspects of the record correctly identified which personality characteristics.

A number of other techniques for establishing projective-test validity have been pointed out by clinical psychologists. Blind interpretations which may be matched against psychiatric judgment have been successfully used (Hertz and Rubenstein, 1939, with the Rorschach; Harrison, 1940B, with the TAT). Experimental techniques have also been employed which have attempted to test some of the assumptions on which test interpretation is based. The studies by Lazarus (1949), Siipola (1950), and others on the influence of color on Rorschach Test responses are cases in point. The problem of validating techniques which aim at revealing unconscious or hidden aspects of personality is a very difficult one, since the criterion for validity is not directly observable. But it can be done systematically, even though very few competent attempts have been made.

A good illustration of the difficulty of studying projective-test reliability may be found in the case of the Rorschach Test. The use of the same ink blots for a second administration results in spuriously high reliability because the subject usually remembers a large amount of what he saw the first time. The problem cannot be solved in exactly the same way as in the psychometric tests, although it must be coped with. It seems not to disturb a great many clinicians that one of the cornerstones of Rorschach interpretation, the ratio of human movement responses to the sum of color responses (*M* to *C* ratio), is apparently a very unstable measure (Fonda, 1951). Researches

performed on this question have indicated that it is certainly difficult with the present ink blots to know what M to C ratio is the subject's true one.

As must be apparent in some of the preceding material, we believe that the mere adding of additional stimulus situations to an already overcrowded field of techniques is of little value to the clinical psychologist. So many problems confront the user of any test, particularly when that test provides the complicated information of a projective test, that it seems to us remarkable that there are so many tests in apparent good repute being used by clinicians without anyone having much sound information about their value other than the optimism of the persons who designed them. A great deal of information is still needed about all our projective tests, even the most well-established ones. Complex problems of reliability, validity, and standardization must be met. We believe that the challenge presented to the clinician and to the personologist in the use of the demonstratedly valid concept of projection is one to which a prospective student might well rally. Here is a kind of procedure which promises a great deal, yet concerning which so little basic research has been accomplished. That clinical psychologists are taking this point of view to heart today is indicated by the increasing number of experimental studies of the validity of projective tests and clinical concepts. Not only is ingenuity called for but a firm foundation in the scientific method as well. Progress can be made only if we have a thorough recognition of the gaps in our knowledge about projection, expression, and adaptation, and their connection with personality theory. The development of the projective approach to personality measurement is no job for a technician who simply administers and reports in accordance with formulas. This is a task for hard-headed, creative, and informed psychologists.

CHAPTER 9

INTRODUCTION TO PSYCHOTHERAPY

In other sections of this book various methods of studying and evaluating the total personality in action have been surveyed. It is obvious to even the casual observer that there are great variations in the ability of individuals to attain a satisfactory living adjustment. On the basis of various criteria, none of which are of themselves satisfactory, a large number of people are referred to as abnormal. They are described as suffering from mental or emotional difficulties or at least as having made abnormal adjustments to life. For diagnostic purposes they are referred to as neurotic or psychotic. The diagnosis, prognosis, and treatment of these conditions are in part psychological problems. The disorders are the result of a long series of processes, hereditary, congenital, and environmental, and complete understanding is dependent upon the examination of all these factors. The difficulties may stem from genetic factors; other causes may have operated in the fetal period; and still others may be found in the interaction between the organism and the environment. A satisfactory understanding of all these conditions, however, requires the participation of the divisions of medical science, psychology, sociology, anthropology, and other disciplines. A complete examination of all these forces is clearly beyond the scope of this book, but some orientation to the problems is essential.

Attempts to view the problems of etiology have been fraught with difficulty that is due primarily to efforts to distinguish between physical and psychological causes. Gandular disturbances, deficiencies in cell nutrients, injuries to nervous tissues, and the introduction of bacteria and toxins may all play roles in personality and behavior disorders. On the other hand, any one who has any acquaintance with habit formation and learning will recognize also that the learning can go wrong and result in personality and behavior disorder. What will be the extent and nature of this disorder will depend in a measure upon the individual's experience with drive and conflict and upon the conditions of his interpersonal relationships. An abundance of evidence has been accumulated to substantiate the fact that structural damage and physical and chemical changes may have marked influence on conscious experience and resulting behavior and conversely that conscious experience may result in physical, chemical, and even body-tissue changes. Such statements may

appear to suggest that the difficulty is to be found either in the organism or in its interaction with the environment No such implication is intended.

Rather it is to be emphasized that physical changes and psychological experiences must be considered for their combined and interrelated influence on the individual. Dunbar (1948) and Weiss and English (1943) among others have called attention to this point of view. Nevertheless mental disorders are still classified under the major headings of organic and functional disorders, a classification that tends to obscure the important interrelationships. Thus certain disorders involving mental dysfunction may be shown to be due to toxic states, bacterial infections, glandular disturbances, or to neurological damage and are consequently called "organic." In other disorders the function is disturbed, that is, the mental aberrations are present, but they cannot be correlated with organic changes. The abnormalities are believed to be psychogenic in origin, and such disorders are referred to as "functional."

Treatment of illness due to organic causes is a medical problem and will not be discussed here. It is true that clinical psychologists have been interested in such conditions and have participated in the devising, administering, and evaluating of test procedures that attempt to measure the nature and extent of the organic damage as indicated by the loss of psychological functions. They have also worked with such procedures in the interest of differential diagnosis.

Treatment of the functional illnesses is based on psychotherapy; and since such treatment involves real psychological understanding and guidance, the interest of the clinical psychologist has been considerable. The functional disorders are classified under two major divisions, the psychoses and the neuroses. The psychoses include such disorders as schizophrenia (dementia praecox), manic-depressive psychosis, involutional melancholia, and paranoia. The neuroses may be differentiated as anxiety states, anxiety conversion or hysteria, obsessive-compulsive, and phobic states or psychasthenia, etc. Full descriptions of these disorders may be found in textbooks of psychiatry such as Henderson and Gillespie (1950) or in textbooks of abnormal psychology, such as Dorcus and Shaffer (1950).

It should be noted, however, that some confusion exists regarding the distinction between the psychoses and the neuroses. Despite some difficulties in differential diagnosis the psychoses are the more serious disturbances, and some differences between the two are readily distinguishable. The psychotics are often poorly oriented for time, place, and person. Although any person may at times be unable to state the exact date, the psychotics may frequently be months or years out of the way. In the same way they may misidentify themselves and be unable to tell where they are. The psychotics sometimes lose contact with reality and evidence great difficulty in separating the products of imagination from those events which take place in reality. Insight

into their condition is apt to be poor and in some instances is completely lacking. They are likely also to show serious signs of personality disorganization, as is indicated by delusions and hallucinations.

The neurotics may sometimes be just as seriously disabled, but the disturbances of their psychic life are less severe and the personality does not show the signs of complete disorganization. They are usually well oriented for time, place, and person; and while their insight does not enable them to understand the reasons for their difficulties, they are able to recognize the fact that the difficulties exist. Although their indulgences in fantasy may be extreme, they are able to distinguish fact from fancy. Finally, they do not suffer the extensive disorganization of personality in which delusions and hallucinations are exhibited.

A number of personality and behavior disorders of less serious nature than psychoses or neuroses are of definite interest to clinical psychology. Child delinquencies and maladjustments, marital, scholastic, and occupational difficulties, and many types of failures in interpersonal relationships may require and respond to some form of psychotherapy.

Early organized psychotherapy was centered on the observation, description, and care of severe cases of mental disturbance requiring hospitalization. These cases included, for the most part, the organic and functional psychoses. With the development of deeper understanding of the personality structure, mainly through psychoanalysis, the psychoneurotic became the object of psychiatric study and therapy. The severe chronic neuroses were given more attention, and considerable therapy was practiced outside the hospital. While the recovery and rehabilitation of the chronic neurotics surpass that of the recovery of the psychotics, the time required for recovery and the number of successful efforts leave much to be desired.

More recently there has developed a widespread tendency to extend the psychotherapy to the mild chronic and acute neuroses as well as to the incipient cases of emotional disturbance. Such cases offer the greatest possibility of success, and treatment of them is very important for society. There is also an economy in therapeutic time and effort. The milder cases are greater in number than the severe cases; and since they are not so severely incapacitated, their influence on the social environment is far greater. A large number of emotionally disturbed persons, who may not fall into definite psychiatric classifications, continue to play an active part in social and economic affairs. In the home, in business, in politics, and in social activities, they exert a far-reaching effect which is unhealthy for them and for those in their sphere of influence. Treatment for them is important not only because they are the group most likely to benefit, but also because they affect the personality and mental health of those with whom they are closely associated. The successful handling of an acute neurotic problem may, then, prevent the gradual development of a chronic condition. It may also benefit those in

close association with the patient, since they will not be subjected to the stresses of close association with neurotic behavior.

The problems of treatment are extremely complex, and it is therefore not surprising to find many differences of opinion concerning them. The conflicting opinions will show themselves in a great variety of questions that have to do with psychotherapy. The more important questions include the following: What should be the training and background of the therapist? When is therapy indicated? What are the objectives of psychotherapy? What are the explanations of the patient's difficulty? What kinds of therapeutic techniques are most efficacious?

BACKGROUND AND TRAINING OF THE PSYCHOTHERAPIST

As has already been indicated, the training and background of the psychotherapist is a very controversial topic. No effort will be made here to present all the points of argument, but rather attention will be given to those conditions on which there is general agreement. In doing so, however, some of the points of controversy will inevitably be raised.

It is perhaps obvious that the therapist must know as much as is possible about the causes of the maladjustments that are manifest in the patient. The necessity for a deep understanding of psychological facts and theories is therefore the first essential. Since for the most part the patient is the victim of faulty and incomplete learning, the therapist must have an understanding and appreciation of the various theories of learning. He must be able to evaluate the importance of drive, reinforcement, and extinction. He must be able to appreciate the fact that emotional attitudes may have damaging effects because the patient has no way to label them. The mechanism of repression must be understood as well as the various psychological devices available to the patient for escape from his guilt, fear, anxiety, and conscience.

The therapist must know himself; otherwise the important relationship between himself and the patient is not likely to be satisfactory or successful. Psychoanalytic therapy insists that the therapist first be thoroughly analyzed himself. Such an analysis serves a dual purpose. On the one hand, the analyst learns about his own drives, anxieties, conflicts, transferences, and repressions; and on the other hand, he begins to learn how these are uncovered and dealt with in the therapeutic situation. Other therapeutic systems have not made the same demand for such a complete training analysis, but all insist that the training for therapy include some techniques for better understanding of the self. Some of this may be accomplished by self-study and by the writing of an autobiography which may then be discussed in detail with a trained and competent therapist.

This self-understanding is important, first, in order that the therapist may

create an atmosphere of freedom which will enable the patient to communicate his fears and anxieties, reach down to his repressions, and develop important discriminations. The anxieties that have been disabling for the patient are common, in a manner, to all people, including the therapist. Unless the therapist's own anxieties have been allayed and understood, he may show apprehension or anxiety when the patient fearfully communicates his own thoughts and thus he will tend to strengthen rather than weaken the patient's repressive tendencies. Perhaps the greatest dangers associated with the therapist's lack of understanding of himself are apt to develop in the transference. As the therapy proceeds, the patient is likely to transfer some of his emotional attitudes to the person of the therapist. The therapist must be able to recognize the unreasonableness of these responses and to further understand and control his own responses to the patient He must be in a position to receive and understand the patient's communications and be able to help him make discriminations. His own anxieties, repressions, and unconscious motivations can seriously interfere with the therapy. Even after a thorough analysis or understanding of the self, the therapist must continually be on guard to prevent his own problems from interfering with the progress of his therapeutic endeavors. His own aggressions and fears may make him stiff and unbending, and his own impulses to protect may likewise interfere with therapeutic progress. Therefore, whenever his own behavior in the therapeutic situation deviates from his rational plan, he may find it necessary to examine his unconscious motivations.

In addition to a broad knowledge of psychological theory and an understanding of himself, the therapist is aided by a real understanding of social conditions and their effect on personality development. Most people have a fairly satisfactory knowledge of the social conditions in which they, themselves, have developed but little understanding of the effects of other social or cultural conditions. This lack of understanding does not apply only to markedly different cultures but also to the different levels of social conditions within any particular culture. Lower-, middle-, and upper-class groups live under different social conditions, and their personality development may consequently be expected to be influenced by these conditions. The crossovers that many individuals make, living at one time with those who have developed under the influence of lower-class social conditions and at another time with those who have developed under upper-class social conditions, are the simplest illustration of the social understanding that is necessary for the therapist. Since social-class frustrations may contribute to the psychopathology of the individual, it is important that the therapist understand the social stresses to which the patient has been subjected. Otherwise he may attribute certain conditions in the patient's experience to unconscious forces rather than to social forces in the patient's environment. Behavior that is tolerated in one social group causes guilt and anxiety in another. The broader the under-

standing of social and cultural forces, the better is the position of the therapist for the understanding and guidance of his patient.

The therapist must, of course, be a master of the techniques and strategy that are the tools for therapy. These techniques and the strategy involved are, in fact, the subject matter for later chapters and will be only briefly referred to here The therapist, whatever his special bent, must understand the techniques and values of suggestion, reassurance, catharsis, free association and transference, desensitization, reeducation, interpretation, synthesis, etc., and must know when they can be most effectively used. Such understanding is developed in part from the psvchological, cultural, and self studies already referred to and in part from the specific study of all the special techniques. Good ability, however, must wait upon actual experience in carrying out therapeutic work under expert guidance. The therapist must receive special training in psychotherapy. This may be accomplished in a variety of ways. He needs to have the opportunity to discuss the theory and practice of psychotherapy in special seminars. One of the most valuable training devices in any field is that of making available to the trainee the work of a master. Thus the sound recordings of the work of a competent therapist may be made available to the trainee along with the opportunity to discuss the techniques that have been demonstrated and errors into which a novice might fall He may also have recordings made of his own therapeutic interviews and discuss with his supervisor the errors and successes that are evident in his early practice. In the examination, discusson, and practice situations, he must learn such important things as when supportive or insight therapy is indicated, which techniques should be utilized, when restraint is necessary in regard to his own participation, when to intervene, and when to use the great variety of attitudes that constitute the strategy of the therapeutic situation.

The therapist must be able to discriminate beween functional and physical causation, or if unable to do so, he must collaborate with someone who may make such discrimination. Since organic changes may result in mental disturbances, the possible organic factors must be understood, or the therapist may make the dangerous error of attempting to apply psychological treatment to organic causes. The ability to make this discrimination is also necessary, since one of the most common and swift recourses of the neurotic patient is to physical symptomatology. These symptoms must be carefully evaluated in every therapeutic situation.

The medically trained therapist may decide to determine for himself whether somatic factors are involved in the patient's complaint. In like manner, when somatic symptoms arise in the course of the psychotherapy, the medical therapist may diagnose them himself. In many instances, however, even the medical therapist does not choose to make all these discriminations himself but prefers to call on medical specialists. Indeed, many psychiatrists prefer to have even the more routine physical examinations done by

other medical colleagues. Some psychiatrists make this decision because they believe that the time given to psychotherapy is so extensive as to prevent sufficient continuing experience in the diagnosing and evaluating of somatic illness. Still others believe that better rapport is established with their patients when the medical decisions are made by another physician.

The nonmedical therapist or clinical psychologist should insist upon a preliminary medical examination. This should be done whether somatic involvement is suspected or not. In the course of the psychotherapy it may be necessary to refer the patient several times to medical specialists for the determination of organic complications. When such referrals are made, it is important that the consultant not become involved in the psychotherapy. In some cases the therapy requires both medical treatment and psychotherapy, in which case the treatment should be carried on by a medical therapist or at least under his supervision.

Psychotherapy as a professional technique belongs primarily to the field of psychiatry, that branch of medical science dealing with the diagnosis, care, and treatment of mental illness. The psychiatrist is required, therefore, to be trained in psychological understanding as well as in medicine. More recently many psychologists with special background and training have become interested in therapy. The distinction between such psychologists and psychiatrists is not always clear-cut. Psychiatry deals with diagnosis, classification, and treatment, whereas abnormal psychology may be considered to be the science that formulates rules and principles applicable to abnormal and unusual forms of behavior. Such distinction of fields might lead us to believe that psychiatrists would be concerned with the treatment and psychologists with the formulation of hypotheses and the submitting of these to experimental tests. In practice both groups engage in both types of work. Investigators in psychology are constantly demonstrating the relationship existing between mental activity and physiological activity and organic conditions. Psychiatrists, as well as general medical researchers, present facts of physical and mental relationships and contribute to the research in abnormal psychology. In the same way the interest of the psychologist in the development of abnormality is carried over into the treatment of abnormal individuals.

Competence in psychotherapy does not come automatically with the attaining of a medical degree or a Ph.D. in psychology. It is acquired only with a special kind of training, some of the elements of which have been briefly described here. Both medical science and psychology have contributed to the development of this training, which is as yet far from complete. Much more study is necessary before we can develop sound understanding of the kind of scientific knowledge on which psychotherapeutic procedures should rest. In any event, it is important for the clinical psychologist who engages in psychotherapy to be cognizant of his limitations and of the necessity for the consultations which these limitations demand.

OBJECTIVES OF PSYCHOTHERAPY

The objectives of psychotherapy have been stated in many ways, but an examination of the terms used often shows differences of psychological theory or method rather than differences in objectives. Thus the objectives may be stated in terms of affective, security, or power goals, depending upon which of these factors has been given greater prominence in the psychodynamic theory. Some authorities state the goals in terms of the possible outcome of a particular method or the degree of change that may appear to be possible in a particular person. Actually the objective of psychotherapy is always the same, namely, to secure the soundest degree of mental or psychological health that is possible. This general objective, however, involves a number of specifics that are obtained in part by enabling the individual to manage his own ego-defense system satisfactorily; in part, by reducing his emotional stresses and making it possible for him to face new experiences objectively; and in part, by helping him to deal with his dynamic drives in ways that are socially acceptable and will result in satisfactory interpersonal relationships.

The ultimate goals include the development of understanding, the release of personal resources, and continuous growth in social adjustment. The neurotic person has developed naïve, rigid defensive habits of dealing with his dynamic needs. He must uncover the meaning and purpose of his symptomatic behavior, develop understanding of his repressions and ego defenses, and find more satisfying ways of dealing with his anxieties. The objective is not to solve a problem or a series of problems but rather to provide for a situation of continuous growth or change so that new problems and recurring problems may be met adequately. The individual must acquire an appreciation of his conscious and unconscious motivations and through corrective emotional experience must develop a sense of security and feelings of personal worth and adequacy. The continuous growth should relieve the patient of his infantilism and enable him to meet anxiety-laden situations with emotional maturity.

The accomplishment of these objectives is not a simple task, and success is dependent upon a number of factors. The adroitness of the therapist, the extent to which the environment is favorable or modifiable, the resources of the patient, and the degree to which the patterns of the illness are modifiable will all enter into the possibility of success.

The goals set for any particular treatment must always depend upon a sound knowledge and understanding of the psychodynamic principles involved. Only on the basis of such understanding can a plan be developed for the treatment. Some things may need to be done immediately, or progress will be impossible; some things must be avoided to prevent therapeutic disaster. Yet the choice cannot be made without genuine understanding. Some of the necessary understandings may be obtainable directly from the patient;

others will come through those close to the patient and by examination of the patient's record of living and the conditions under which this record was made. Still others will be obtained through physical and psychological diagnostic tests and examinations. With such knowledge in hand, it is possible to come to some general decision regarding the possible goals and methods to be utilized for obtaining them.

The method of therapy to be used may then be related to the objectives or possible goals. In general, two types of therapy, insight and supportive, may be distinguished. "Insight" or "uncovering" therapy describes those treatments in which there is an effort to bring about a permanent change in the ego by developing the patient's insight into the reasons for his difficulty. The method also promotes emotional growth and understanding and consequently brings about an increasing ability of the ego to achieve satisfactory life adjustments. If the treatment is arranged to give support to the ego, rather than to bring about permanent ego changes, it is called "supportive." While it is possible to deal entirely in terms of either support or insight, this situation seldom occurs and most treatments involve both approaches. The terminology is, however, useful in distinguishing one major effort from another.

While some support is inevitably present in all insight therapy and some insight is obtained in all supportive treatment, the therapy can be best planned when the therapist has decided which of these objectives is to be uppermost. Supportive therapy is used in certain acute cases where it is clear that the ego's functional efficiency is only temporarily impaired. Persons who have been well adjusted most of their lives and who become maladjusted or develop acute neurotic disturbance as a result of extremely difficult environmental circumstances may require only support for the reestablishment of healthy personality attitudes. The long history of satisfactory functioning shows that no permanent change in the ego is needed. The support of the therapeutic situation enables the patient to reduce the intensity of his anxieties and to regain the self-confidence necessary for the adjustments that he must make. In the course of such treatment, the patient will develop some insight and understanding of his acute maladjustment, but the fact that he has been capable of good adaptive behavior will make unnecessary the longer insight or uncovering analysis.

Supportive therapy may also be called for with certain severe chronic cases in which the illness is so long standing, the resources for health so poor, and environmental blocks so great that there is practically no hope of effecting a permanent change. Such people may have to receive some assistance and guidance most of their lives. The guilt, anxiety, and inferiority feelings cannot be traced back to the source, but rather must be assuaged by the permissivity, protection, and reassurance of the therapeutic situation. Thus support is not expected to bring about a synthesis of the personality or provide for satisfactory adjustment that is lasting. It merely tends to strengthen the

patient's spontaneous defenses and provide at least temporary and relatively satisfactory adjustment.

Insight or uncovering therapy is, of course, the preferred treatment for most adjustive difficulties. The objective is to increase the integrative faculty of the ego and to rid the patient of his fixed neurotic defenses, thus freeing him for flexible adaptative behavior. This kind of insight cannot be attained by simple intellectual discovery but requires the longer and more painstaking procedure of exposing the patient's ego to various emotional attitudes and situations. The patient must bring to the fore the emotional situations which he has been unable to face, those which he has repressed and around which he has developed his fixed neurotic defenses. The conflicting emotional material must be dealt with first in the therapeutic situation, and the adaptive emotional behavior developed in the therapeutic relationship must be gradually expanded by trial and use in real-life situations. It is an important task of the therapist to determine the degree of insight and support that are necessary and possible in each instance.

Another method used for distinguishing psychotherapies is to refer to them as situational, relationship, or insight therapies. The first of these, as the name implies, is a treatment of the situation. No effort is made to bring about a major change in the person but rather to manipulate the situation so as to relieve the stress. Changes may be made in the patient's occupational or marital status, or he may be uprooted from his environment. For most people the method is not likely to be very satisfactory for a number of reasons. First, major changes in environmental situations and relationships are difficult to accomplish. Second, since a great part of the difficulty probably lies within the individual, the manipulation of the environment is likely to bring only minor relief. In dealing with problems of children, some important situational changes may be necessary, and in very simple adjustment problems of normal people such treatment may be adequate. For the great majority of those who come for treatment much more is necessary, and early situational handling may actually be harmful rather than helpful.

Relationship and insight therapy are concerned primarily with changing the individual. In the former the assumption is made that the change that takes place is due to the relationship that exists between the patient and the therapist. A helpful relationship may be accomplished by catharsis, that is, by getting the patient to discuss his problem and difficulties in a warm and permissive relationship. It may also be accomplished by support through persuasion, suggestion, and reassurance. The individual does not learn much about what goes on within himself but attains better adjustment through satisfactory relationship. Insight therapy, as has already been said, is dependent upon uncovering the difficulties and understanding the factors that are responsible for them. It becomes apparent at once, however, that relationship and insight are not easily distinguishable. Simply knowing the diffi-

culty does not always enable us to deal satisfactorily with it. While it is possible to indicate that one depends more upon relationship in one situation and upon insight in another, both will be involved in most well-planned therapeutic situations.

It is obvious that the objectives of therapy cannot be attended to separately but that they are interrelated in any well-planned therapeutic endeavor. As the therapy proceeds, however, attention will, in part, be focused upon the attempt to penetrate to the root of the disorder and to eliminate the cause. In so doing it may be necessary to attend to some immediate objectives; otherwise the ultimate goal may be impossible. An effort to find the cause, for example, may make it necessary to eliminate symptoms that interfere with progress. However, the symptoms must be recognized only as signposts. The removal of the symptoms does not bring about recovery. Actually there are often contraindications for symptom removal. Substitute symptoms sometimes appear when original symptoms have been removed, and, on occasion, the removal of the symptoms may give the patient sufficient temporary relief to destroy the motivation for continued treatment. In some instances, however, symptoms may be so distressing or incapacitating that it may be necessary to deal with them immediately, or further search for real causes may be impossible. Ultimate objectives may thus occasionally have to wait upon more immediate ones. Other diversions may be necessary in the case of patients who have been inhibited and surrounded with taboos and who need release of vicarious aggressive action. Experimental efforts to improve in social and in occupational experiences may also have to be made.

An unusually instructive account of the principles and goals of insight therapy has been presented by Finesinger (1948). He has not only outlined the steps and the goals but has provided illustrative material that is invaluable for teaching purposes. A number of his contributions deserve special comment. While his ultimate goals are similar to those already discussed, he has outlined a number of intermediate goals under the headings of Adaptation of Physician-Patient Relationship, Production of Material, and Interpretation of Material.

In discussing the physician-patient relationship, he has called particular attention to two aspects that are of fundamental importance. The relationship is seen as providing the support that is necessary and also the tension under which the therapy advances. The relationship is viewed, then, as one that supplies a balance between support and strain. If achievement of the goal is blocked, there may be need for shift in the intermediate goal. In some instances it may be necessary to increase the tension to direct the efforts to the real issue, while in other instances the shift that is required is that of placing more emphasis on support. Intermediate goals regarding the production of material are considered under the following headings: (1) current symptoms or problems, (2) pattern reaction, (3) effect of patterns on current

adjustment, (4) meaning and function of patterns, (5) historical development of patterns. Thus the goals follow a certain order beginning with a detailed description of the symptoms. When this has been achieved, the goal is shifted to the attempt to determine whether a certain pattern is *unique* or a repetition of an organized pattern. When these have been recognized, attention is focused on the effect of these patterns on current behavior. Otherwise the intermediate goals are seen as attempts to understand the reasons why the patient reacts pathologically and the historical development of the patterns. Considerable flexibility is used in dealing with the intermediate goals, but there is no random jumping from goal to goal. It is believed best to pursue a given goal until it is exhausted or gives evidence of becoming unproductive.

Pursuing the intermediate goals the therapist is guided by two principles which Finesinger calls "the principle of focusing or channeling" and "the principle of minimal activity." The first of these principles is involved with the focusing of the patient's efforts on relevant material. This is accomplished by the display of interest or the withholding of any signs of interest by the therapist which, if adroitly done, results in a channeling of material so as to penetrate the patient's defenses and enable him to bring forward charged material. The second principle is related to the degree of activity on the part of the therapist in the pursuance of the goals. Finesinger stresses the necessity of minimal activity but calls attention to the fact that this does not mean no activity. The attempt is to keep the activity as low as is consistent with the attainment of the goals. Minimal activity is preferred because it tends to reduce the random participation of the doctor but also because it allows the patient to project his own pattern into the therapeutic relationship and thus provides the basis for better understanding. The minimal activity of the doctor is also seen as useful in enabling the patient to talk more freely in meaningful areas and in reducing the dependency on the doctor. Students of psychotherapeutic goals and methods will find the procedures outlined by Finesinger provocative and helpful.

STRATEGY OF THERAPY

Although the systems of psychoanalysis and distributive analysis and synthesis as well as such devices as suggestion and hypnosis, desensitization and reeducation, and various special therapies are presented as means of accomplishing the goals of psychotherapy, it will be noted that these therapies are not mutually exclusive and that part of each is present in all therapies. Whenever one enters into the therapeutic situation, it is obvious that analysis of the patient is involved. The patient is the object of observation, study, and evaluation; and whether one's technique is that of classical psychoanalysis or not, the treatment cannot continue without some analysis of the psychological

factors. In a like manner some synthesizing of the patient's experiences will be a part of all psychotherapeutic situations. The patient is likewise called upon to participate in some new learning and to modify some existing learned patterns of response. Therapy will, therefore, always involve some reeducation. The patient's response to some stimuli must be attenuated; thus desensitization will be attended to. The therapeutic situation itself carries strong suggestive power, and, while the amount of suggestion involved and the conditions under which it is utilized will vary, it will inevitably be present.

It is our intention here to comment generally on what the psychotherapist might do in order to accomplish his objective without regard to the following of the tenets of a particular therapeutic method. The neurotic patient presents himself with a complaint or a series of complaints that are vague and difficult to understand. Neither the patient himself nor those close to him are able to understand the difficulty. People who observe the patient closely are impressed by the fact that he does not make use of his own resources to attain for himself the satisfactions that are his for the taking. Using their own procedures as a point of reference, they feel confident of their ability to advise him of the simple steps necessary for satisfactory adjustment. When these methods cannot be satisfactorily utilized, the behavior is described as stupid. The individual appears to be capable of acting but does not do so. Close observers of neurotic people frequently describe them as "having everything to live for" and are consequently amazed at their inability to enjoy life. The individual appears stupid because he has the resources necessary for attaining mastery in some situations and a strong need for such attainment, but he is unable to enter into competition. Though capable of affection and desirous of obtaining it, he is cold and unresponsive; though physically capable and interested in attaining sex rewards, he is unable to make any satisfactory approach to the area. This stupidity is all the more ununderstandable since it is not descriptive of all the behavior. Although showing average or superior intelligence in some areas, the neurotic appears stupid in others. All the areas of stupidity cannot readily be spotted, and some of the manifest areas may later be recognized as cover-ups for more agonizing areas of difficulty.

The patient also presents a variety of symptoms and complaints. He complains of being unable to sleep, of becoming rapidly fatigued, of irritability, of headaches and nausea, and of being fearful and anxious. If he takes the ordinary risks of life, he is miserable. If he does not take the risks, he is miserable because he does not attain the goals. He is unhappy in all his efforts to approach love, marriage, social experiences, or responsible work situations. If he does not approach these situations, he is disturbed because the satisfactions of such situations are necessary to him. The misery involved is real and must be so recognized. The suffering is due to the fact that the patient is in serious conflict, and the conflict is in part obscured by the

symptoms. Strongly driven to attack and to flee, he is unable to act and consequently remains in misery. Much of the conflicting material is not understandable because it is repressed. The competing drives are not labeled so that the patient has no language to describe his conflicting emotions. He is in no position to use his intelligence to solve his problems since he is unable to describe them. Very extensive study of the patient's life may be necessary to unearth the repressions and bring them into focus for study and understanding Otherwise the patient's difficulties may be understood in terms of faulty or incomplete learning. Again a searching analysis of the development of the personality is necessary in order to become aware of where the learning has gone wrong.

The symptoms and complaints of the patient are the most obvious aspect of his behavior but must be recognized as the signposts and not the sources of the difficulty. They are, however, what the patient brings to the therapeutic situation, what he considers to be the sources of his difficulty, and what he wishes to be rid of. They serve the purpose of reducing the conflict and making it more possible to bear, and their continuance is in part due to this fact. Since the successful symptom reduces the misery, it is reinforced and consequently becomes a learned habit. It does not solve the basic conflict, but it takes the patient some distance from it, and unless the therapist is careful it may also lead him down blind alleys. One of the first things that become evident to the therapist is the fact that the patient's original complaint is frequently some considerable distance from the source of his neurotic difficulty.

The atmosphere or setting of the psychotherapeutic situation must be quite different from that in which the patient has lived and attempted to deal with his neurosis. The dilemma of the patient at the time he presents himself for therapy has been well described by Dollard and Miller (1950, p. 229).

> In the typical patient, his friends and relatives have given up the attempt to help him. Perhaps his physician has also thrown up his hands. The patient himself is becoming hopeless. He has suffered long and tried many cures. All have proved vain. The patient's friends and family have stopped listening to him—he has complained too long, never able to explain himself. The environment has proved hostile to the expression of his drives, and he fears prudish rejection and gossip if he tries again. Furthermore, he fears criticism of his thoughts if he speaks them out. He feels that people expect him to be unbearably good in thought and act. He has also suffered a series of wounds to his self-esteem. He finds his own thoughts confusing and sometimes menacing. He has lost confidence in his ability to use his mind. He has been humiliated by his many failures to solve real life problems; he has been forced to attempt to

adapt in marriage, school, army, or business and has failed. He senses the contempt of others at these failures. No one understands him and he does not understand himself.

The therapeutic environment must be essentially different from the one just described. Since others have given up in their attempts to help him and he himself is without hope, the new environment must provide hope. Since others have stopped listening to him, the new situation must provide the opportunity to talk without interruption. Since he fears criticism, is concerned about his bad thoughts, and has lost his self-esteem, the stage must be set so that he may talk without fear of criticism, express his thoughts without being remonstrated with, and have an opportunity to regain his self-esteem. Since he is confused, feels misunderstood, and believes that others hold him in contempt, there must be someone who is not contemptuous of him, who does not consider his statements ridiculous, and who gives promise of understanding him and helping him to understand himself.

The establishment of such an atmosphere is extremely difficult and is open to the possibility of great error. The adroit handling of this difficult situation is what distinguishes the competent psychotherapist from the less successful one. The patient must find in the therapist a person with prestige who presents an attitude of warmth and responsiveness and who listens attentively and sympathetically. The patient is in need of a more satisfactory relationship, and the therapy must begin with the establishment of this relationship and must proceed and progress with the changes in the relationship as indicated in the development of the treatment.

The difficulties surrounding this point may be indicated by considering some of the kinds of relationships that can be and are established. Depending upon the attitude of the therapist, the relationship might be typically physician-patient, parent-child, teacher-pupil, or friend-friend. For accomplishing the purposes of the treatment, any one of such relationships might be seen to have some advantages. The physician-patient relationship is known to us as that in which the physician makes an expert diagnosis and authoritatively prescribes treatment. In our later discussions of suggestive and hypnotic therapy and in treatment of desensitization, it will be noted that this kind of relationship is frequently utilized. The parent-child relationship is one in which there are strong affective ties, the parent taking the role of full responsibility and authority and the child that of dependence. The relationship also suggests relative permanence, at least of the affective ties. In later discussions of psychoanalytic therapy it will be evident that such a relationship is frequently established. The patient looks upon the therapist as father or mother and directs toward him the corresponding emotional responses. The fact that such a role is taken may have something to do with the length of the analysis and with the difficulty of breaking the transference. The pupil-

teacher relationship implies that one is to teach and the other to learn and therefore places great stress upon learning and the importance of intellectual processes. In the extreme use of reeducation therapy such a relationship may be established. In still other situations the relationship may be more like the give and take of complete mutuality of two very good friends.

Although no specific therapy sets out to establish a particular relationship for all patients, the therapist sometimes inadvertently does so, and on occasion for specific parts of the therapy a particular relationship is established by design. Actually all these relationships have been experienced by the patient in his life outside of therapy. The patient needs a new kind of relationship, and the therapeutic one at its best does represent something that is different. In fact, it is this difference which makes it difficult to give it a name. We could call it the psychotherapeutic relationship, but choosing a term will not make the situation intelligible. The psychotherapeutic relationship will require further description.

Warmth, responsiveness, sympathetic interest, and understanding are of great importance in establishing rapport and in laying the foundation for a deeper emotional relationship that will be important in the treatment. The patient, who has worn out the interest and sympathy of his friends, finds that the therapist evidences a definite interest in him. In nondirective therapy this is accomplished in part by reflecting back what the patient has said. Questions may also serve as signs of interest and may help to reinforce talking about critical material. The questions are not put forward in nondirective therapy but are prominent in the method of distributive analysis and synthesis and appear less frequently in psychoanalysis.

The atmosphere of the therapeutic relationship is further characterized by a high degree of permissiveness. The patient must learn that all kinds of attitudes may be expressed. The therapist's acceptance of his statements, his calm manner, and the lack of moralistic judgment make this possible. The patient must be encouraged to recognize that feelings of aggression, hatred, antagonism, guilt, and shame may be freely expressed and that they may be directed toward anyone including close members of the family or the therapist himself. These feelings will be expressed once the patient realizes that the ordinary attitudes of social disapproval are not forthcoming. In many instances this may be accomplished by saying nothing but showing no signs of disapproval or shock. While therapists may show great variability in the degree of willingness to answer the patient's questions, it is our opinion that in most instances a calm and objective answer is most desirable. The calmness and reasonableness of the therapist not only reduce anxiety but tend to be imitated by the patient. The permissiveness of the therapeutic situation then reduces the fear and anxieties that keep repressed material from coming to the surface. The permissiveness, however, should relate primarily to the expression of ideas, feelings, and emotions and not to overt behavior.

This is particularly important in treating children by play and release therapy. While an unusual amount of freedom must be allowed the child, regard for the rights of others must be observed, and attention must be given to the kind of social adjustments that eventually must be made.

Reassurance is necessary in all therapeutic situations. It can be a most valuable agent for fear and anxiety reduction. Great care must be taken, however, that the reassurance is not the simple "Pollyanna" type of assuring the patient that everything will be all right or of promising rewards that are not attainable. Such reassurance has already been given by friends and relatives; and when used as a simple supportive device for making the patient feel better, it does nothing but teach him to come for more reassurance or to recognize that your promises are empty. The reassurance must be used to reduce fear so that new thoughts may come to the surface and new acts be tried.

Some suggestion will inevitably be a part of all therapeutic situations. The situation itself, no matter how arranged, carries with it some suggestion. The prestige of the therapist and the confidence that he provides are in part dependent upon implied suggestion. The unobtrusive direction of attention to improvement accomplished but not yet recognized by the patient is frequently helpful. In some situations where the therapy is mainly supportive, suggestive therapy may be used, and on occasion necessary symptom removal may be accomplished in this way. In insight therapy suggestion never plays an important role. In most instances it is important not to remove symptoms since this may provide just enough relief to interrupt the main purpose of the treatment. The use of suggestion and hypnosis for the recovery of amnesic material and for the promotion of a certain kind of catharsis will be discussed in the chapter on psychotherapeutic devices.

The therapeutic situation must revolve about and be dependent upon what the patient has to say. The success of the treatment depends upon understanding the patient, and understanding cannot be accomplished unless the patient talks. The technique of getting the patient to talk and to continue to talk must be the real core of the treatment. It will be remembered that Freud depended first upon a mental purging or catharsis which he later gave up for free association. Great differences exist between the systems of therapy as well as between individual therapists using any one system in the handling of the patient's verbalizations.

In psychoanalysis great emphasis is placed upon free association. The patient is required to say immediately everything that comes to his mind. He must not reject any thought no matter how trivial, embarrassing, or obscene. He is required not to attempt to present material that follows a logical sequence but to say whatever comes to his mind and to try hardest to say that which is most difficult. This obligation is described as the "patient's work" and is applied against the force of neurotic fear. Actually these asso-

ciations are frequently not free and easy. The patient develops anxiety about some of the associations. He blocks, dodges, suppresses, and becomes mute. The therapist must provide rewards for talking so that the patient may be kept at his task Fortunately the permissiveness of the therapeutic situation provides one immediate reward. Being allowed a good turn to talk may be itself a novelty. The therapist is not shocked by what the patient says and does not criticize him. Thus even though fears are aroused in free communication, they may be gradually extinguished, since there is no punishment for them. The therapist must early indicate that the patient will not be judged or punished for his verbalizations, nor will the information be passed on to others. In other situations in which the patient has talked, he has been interrupted, criticized, and condemned. In the new situation this is not so. The patient is encouraged to continue without interruption, criticism, judgment, or condemnation. The patient will now find it possible to talk in the presence of anxiety. He may try out the therapist by saying things about which he is fearful in expectancy of some form of the usual punishment. When such punishment is not forthcoming, his fears about such verbalizations are gradually extinguished. Each bit of material verbalized provides cues for further verbalizations, and using these cues the patient moves step by step to the recovery of latent or repressed material. As the fear and anxieties are reduced, more and more anxiety-laden repressed material comes to the fore. The patient must, however, gradually learn to distinguish between freedom of speech and freedom of thought. There may always be some barriers against freedom of speaking. Speech may have to be guarded in the presence of enemies, before strangers, or before young people. No such barriers are necessary in thinking. It is possible to think freely and to anticipate possible rewards and punishments for action. In this way one may develop the maximum freedom to act adaptively.

The degree to which the therapist participates in this talking period varies considerably both with regard to the type of therapy used and with regard to the stage to which the therapy has progressed. In psychoanalysis, at least in the early stages of the treatment, the patient is seldom interrupted. Later on when more advanced interpretations are being arrived at, the therapist may greatly increase his verbal participation. In nondirective therapy the therapist's verbalizations are minimal and are restricted to a particular kind of response throughout the treatment. In distributive analysis and synthesis, the question-answer type of interview is followed, and the verbal participation of the therapist is consequently increased. In supportive therapy the therapist is more active than in insight therapy.

In all instances where real insight therapy is attempted, effort must be directed toward a genuine understanding of the development of the personality. Since there is much that is not known to the patient himself, some special means must be designed to gain for the patient this real understanding.

In addition to catharsis and free association, other techniques must be utilized. The patient must uncover repressed material, examine his attitudes from a variety of points of view, learn important discriminations, and finally synthesize his learning so as to develop an understanding that will enable him to meet life satisfactorily. The accomplishment of this goal implies much more activity on the part of the therapist than has thus far been indicated. By catharsis, free association, or even through probing questions, the patient may reach repressed material. He will, however, frequently require help in identifying distortions of his mental life, in developing discriminations, and in correctly labeling emotional responses. The therapist will play a more or less active role in helping him to accomplish these ends. The trained therapist will be able to recognize that certain parts of the story do not make sense, that some important points have been omitted or evaded, and in many instances he will be able tentatively to supply these missing links. In developing this theoretical understanding, the therapist will be guided by a variety of occurrences. At times the patient will be unable to proceed with his associations. When such blocking takes place, the therapist may offer tentative interpretations. Similarly, the therapist may intervene if the patient leaves unmentioned some whole area of behavior common to all people. Slips of the tongue and other errors may also point the way to repressed material; and while in most instances the patient will be expected to develop his understanding through free association, in many therapeutic situations the therapist gives rather active help to the development of interpretation.

Since the therapeutic situation is in part a learning process, much of the therapy will be concerned with teaching new discriminations. Depending on the system and on the individual therapist will be the degree of activity utilized by the therapist in teaching these discriminations. As the patient relates his story, attention must be directed to relevant points. The patient's present inhibitions may be contrasted with the lack of punishment in his present environment. Attention may be directed to his capacity as compared with his attempt to accomplish, and particular attention is given to the effort to encourage the patient to experiment with a variety of points of view with regard to each fact of experience. The success of the therapy will depend in a great measure upon the adroitness with which the therapist handles this and other critical situations. Interpretations must not be presented too early in the treatment. They should first be presented as tentative hypotheses, subject to change as new facts are learned. They should not be forced upon the patient but presented to him for examination and study.

In Chap. 11 on psychoanalytic therapy, attention will be given to the transference situation. This refers to the intensive emotional relationship of the patient to the analyst. The patient projects upon the analyst the emotions which he has experienced with regard to other people, especially his parents. In the transference neurosis the whole infantile experience with all its atti-

tudes and taboos is repeated, and in the classical psychoanalytic situation this is the essential feature of the treatment. Whether one uses the psychoanalytic method or not, it is important to recognize that the permissive conditions of therapy result in the direction of strong emotions toward the person of the therapist. These responses are frequently those which have long been inhibited and for which the patient has not satisfactory understanding. Consequently by helping the patient to label these emotions, the therapist makes it possible for the patient to utilize them in his reasoning and future progress.

It is seldom true in therapy that mere analysis results in recovery and reorganization of the personality. Eventually there must be some organizing and pulling together of important findings resulting in a synthesis of the personality. It is probably true that the synthesizing tendency of the human personality enables some patients to make spontaneously some constructive use of the material brought forward in analysis. In most patients, however, the illness prevents the ready functioning of associative healing tendencies and makes it incumbent upon the therapist to guide the patient's synthesis. Therapeutic systems differ in their methods and timing in developing the synthesis. Psychoanalysis allows for a long period of free association and the development of transference before interpretation and direction of discrimination. Distributive analysis and synthesis prefers to direct the patient to a synthesizing review after every analysis of situations or symptoms. This is true whether the synthesizing review seems to be called for after one consultation or after several.

Another point in which there is considerable difference in practice is the degree to which the therapist participates in decisions and control of the patient's life outside the therapeutic hour. Nondirective therapy takes the position that the therapy is most effective when the therapist does not take such responsibilities. Definite limitations are set up and made clearly understood to the patient in the early part of the treatment, but the therapist believes that it is unwise to intervene in the environment in the patient's behalf.

Most psychoanalytic therapists also prefer a minimum of participation in the patient's environmental control. When the patients who are being analyzed are hospitalized, the responsibility for environmental manipulation and decision is placed upon an administrative staff member who is not involved in the therapy. When treating patients who are not hospitalized, the analyst does put some restrictions on environmental behavior. This is usually done early in the therapy to prevent the possibility of precipitate actions that may have damaging effects. Thus the patient is told not to change his job or his marital status or make other important decisions until a better understanding of his motivations has been attained. These directions are frequently changed later as the patient becomes more able both to make satisfactory decisions and to receive the unobtrusive help of the analyst in so doing.

In distributive analysis and synthesis, the necessity to develop a continuing synthesis may bring the therapist into more active relationship to present environmental adjustments. In frank reeducation therapy the therapeutic sessions may actually be spaced so as to allow the patient to put into practice what he has learned in therapy. In supportive therapy the therapist is more active with regard to the patient's outside life, and in shorter course therapy that is psychoanalytically oriented the analyst will be found taking a more active role in the patient's manipulation of the environment.

In any event, no matter what the therapeutic method, the final test is the ability of the patient to make a satisfactory adjustment to real life. The neurotic, or the person with personality disorder, has given up systematic efforts to use trial-and-error methods to overcome his difficulties and solve his problems. In some cases very little help is needed, and the temporary support provided by the therapist may enable the patient to make new and realistic attempts to settle difficult life problems of adjustment. At the other extreme are the more severe disturbances in which every change in the environment is responded to with neurotic escapes. Between these two extremes we find all degrees of difficulty. In the less severe cases a great part of the therapy may be expected to take place outside the therapeutic hour. In more severe cases the therapeutic sessions must prepare the patient for the meeting of outside experiences, and as the treatment progresses, more and more dependence may be placed upon the valuable effects that result from real-life experiences. The experiences in the therapeutic hour are a preparation for later use, and sooner or later the patient must be led to engage in new experimentation in the meeting of the realities of living. He will finally have to solve his own problems with his family, his superiors, his competitors; and the sooner he may be led to approach these, the better.

While there are great dangers to overactivity on the part of the therapist, it is possible that passivity has been overstressed. In the treatment of most patients, the time arrives when the therapist must encourage the patient to participate in those activities which he has avoided in the past. There can be no more powerful therapeutic force than the performance of activities formerly impossible. Each success encourages new trials, decreases fear and anxieties and feelings of inferiority and resentment. The success in the therapeutic hour is in part a rehearsal which must be followed by actual performance. No insight or emotional discharge can be as rewarding as accomplishment in real life. The rule of no important changes in life situations during the treatment is founded on firm ground and must be carefully attended to. If this is not attended to, the patient whose sexual anxieties have been relieved might rush impulsively into promiscuous activities; or the timid person who learns about the necessity of standing up for his own rights might behave impulsively in so aggressive a fashion as to get himself into even greater difficulties. Yet in certain phases of the treatment the patient

may be ready and able to take important steps in real life, and he should not be prevented from doing so simply because he is not through with the treatment. Only experience can guide the therapist in making these important decisions. It must be obvious, however, that at some point in the therapy the patient must experiment with the carrying out of his new learning into actual life performance.

PROGNOSIS FOR THERAPY

The selection of the patients who are most likely to benefit from treatment is difficult because of the lack of any completely satisfactory criteria for such decision. The examination of a number of factors including physical condition, age, intelligence, adaptability, environmental situation, length of illness, motivation for treatment, use of symptoms, etc., will be useful in coming to decisions regarding prognosis as well as the therapeutic approach.

The physical condition of the patient may have serious limiting effects upon any psychotherapeutic effort. It is essential in the beginning that the possible role of any organic disturbance be clearly understood after competent medical examination. Even in situations where the organic factors are not directly responsible for the mental difficulties, chronic or crippling somatic conditions may constitute serious handicaps for satisfactory psychotherapy.

The possible modification of the environmental situation in which the patient moves is another important limiting factor. The therapy may result in the development of understanding and modification of behavior, but if the patient must continue to live in an environment that is threatening and frustrating, he may find it difficult to succeed. If there is no way out of an unwholesome relationship with the family or an impossible marriage, if there is no relief from financial difficulties, if he cannot secure satisfactory employment or work relationships, the conditions are less favorable for treatment. It is conditions like these that have led to the statement, "We take in the patient and treat his relatives."

While it is possible to effect some changes in those with whom the patient must live, the treatment of the whole environment is usually an impossible task. The prognosis may be said to be poor, then, when unfavorable environmental conditions that cannot be reversed or extensively modified have important roles in the development of the neurosis. In this connection it should be noted that each person's assets will also be a determining factor. In general the more the patient has to live for, the more favorable the prognosis. Physical health and strength, beauty, intelligence, education, special abilities, as well as social status, wealth, professional position, and good family relationships will in general tend to facilitate the treatment. These must, however, be examined with regard to what the patient believes about them, since it is their personal meaning to the patient that is important. In any case they are

all relative to the person's needs and the kind of competition in which he is involved.

The age of the patient also has important implications for the chances of recovery. Classical psychoanalytic therapy finds that patients beyond the late forties do not respond well to treatment. Since the method requires the tracing back of associations, the mass of psychic material to be examined is too extensive. In all therapies the treatment requires change and new learning. Since young people learn or make changes more easily, youth is an advantage. This does not mean that older people cannot be successfully treated, but only that the prognosis is better for the young who are more easily influenced to change. Very young children, however, are greatly influenced by their close environments, particularly the home environment, and consequently treatment of the child and the environment may have to proceed concurrently. This may involve consultations with the parents and in some instances the removal of the child to an environment that is more favorable for satisfactory development.

Intelligence and education must also be considered in evaluating the treatability of the patient. This does not mean that the higher the intelligence quotient and the amount of formal education, the better the prognosis. However, since much of the treatment involves the use of language, a certain minimum ability to use and respond to language is necessary. On the other hand, persons of limited intelligence may be aided in supportive therapy through sympathy and reassurance adroitly utilized.

Of greatest importance, perhaps, is what may be called the patient's adaptability. We need to know a good deal about the individual's typical methods of meeting new situations in life. This requires a rather complete understanding of the life history, particularly with regard to adaptation to new demands. Weaning, first school experiences, puberty, moves to new neighborhoods, early work experience, deaths in the family, sex experience, marriage, etc., are examples of the kind of life situations which may be studied with regard to the individual's adaptability. A study of the way the individual has met these and other crises will make it possible to appraise the integrative capacity of the ego. The person who shows strong adaptive behavior in certain areas at least has given evidence of the possession of something on which to build. The individual whose conflict exists only in one area has a better chance of profiting from the therapy than one whose adaptability has been consistently poor.

It is not enough simply to know that there have been many episodes of poor adaptability; one must also know the conditions under which such difficulties developed. It is necessary to know the severity of the difficulty, the amount of provocation, the number of maladjusted episodes, and the degree of satisfactory adaptation during healthy periods. If, for example, there have been many poor episodes under favorable conditions, the prognosis is

not so good as when the situations may be related to unfavorable conditions. The individual with a long history of neurotic episodes that started early in life and have been relatively continuous will have missed much valuable learning and will have formed habitual modes of response that are resistive to change. The fact that the difficulty is continuous suggests that the motives behind it are strong; these are poor prognostic signs. On the other hand, those patients whose difficulties did not appear early and whose episodes have not been continuous have less new learning to do and have not acquired so many bad habits. The likelihood is also that the motivations for neurotic behavior are not so strong, and consequently the patients are in a better position to profit from therapy.

The prognosis is also more favorable if the patient is strongly motivated to do something about his unfortunate condition. It is much better, for example, in the patient who seeks treatment on his own than for one who has to be urged, cajoled, threatened, or finally dragged into the treatment. Similarly, the willingness to make some sacrifices in order to get treatment is a favorable sign of strong motivation.

The effectiveness of the symptoms will influence both the patient's motivation for treatment and the therapist's chances of success. Some symptoms are exceedingly effective in reducing the drives in the neurotic conflict; and although the comfort derived by the patient may be only temporary, his motivation to seek treatment may be weakened. In addition, since such symptoms are strongly reinforced and offer some protection to the patient, they are difficult to deal with in treatment. Added difficulties arise if the patient's symptoms result in his receiving rewards from the environment. Thus the patient with a hysterical paralysis who receives financial rewards for his illness (disability compensation) will have his motivation for treatment reduced and will present a more difficult problem in the treatment situation. Otherwise the symptoms may be expected to increase the motivation for treatment. This is true if the symptoms are very disadvantageous to the patient both with regard to his personal comfort and the problems that they cause in his efforts to adjust to his environment.

ECONOMY OF THERAPEUTIC RESOURCES

Important advances have been made in the education of the public to the understanding of mental maladjustments. Consequently, seeking aid for problems of adjustment is no longer accompanied by the same anxiety and concern that were a part of such action in the past. People are becoming increasingly aware of the fact that emotional disturbances can be given rational treatment. The extension of psychiatric treatment to the mild neuroses and behavior disorders gives also the promise of the increase of our knowledge of the dynamics of psychopathology. Most of the theory of psycho-

pathology has developed from the study of chronically ill people, and there is considerable evidence that the understanding of the dynamics of personality development will be greatly aided by the careful study of those who are mildly ill or those who have been relatively healthy most of their lives.

Because the enlightenment regarding mental and emotional illness has resulted in a great increase in the number of people who seek aid for satisfactory adjustment in life, the number of trained therapists is not sufficient to care for all those who need help. It is necessary, therefore, that a much larger number of competent therapists be trained. However, these therapists must recognize the fact that therapy does not take place only in the therapeutic hour but extends itself throughout the individual's life experiences. The individual must go on living while he is receiving treatment, and what happens to him in these real experiences will have a great effect upon the final outcome. It is this very fact that increases the difficulty of evaluating the efficacy of any particular therapeutic technique. Parents, teachers, ministers, recreation leaders, social workers, employers, relatives, and friends are constantly being utilized as therapists, wittingly or unwittingly. Sometimes the individual takes his problems to these people, and sometimes such people feel a real concern about the individual and try to solve his problems and advise him concerning his behavior. Their counsel may have a far-reaching effect. What is said here should not be construed to mean that anyone may serve satisfactorily as a therapist or to suggest that parents, social workers, ministers, and teachers be set up as therapists. The psychotherapist must be carefully trained both with regard to breadth and specificity. What is implied is that others will be involved in situations that are in a sense therapeutic and that the trained therapist must be concerned about their effectiveness. More specifically it means that the professional therapist must give some of his time to community problems, particularly as they relate themselves to therapeutic and preventive possibilities. The recent attention given by the American Psychiatric Association to "leisure-time activities" is one indication of a recognition of this fact. The help that a professional therapist may give to those who are constantly engaged in situations involving individual and group personality adjustment may prove to be much more valuable than a comparable amount of time spent in dealing with the problems of a single chronically ill person. It is likely also that the therapist engaged in such activity will gain in his own understanding of the dynamics of personality development. The growth of interest in group, play and release, psychodrama and other special therapies is another indication of the recognition of the economy of therapeutic resources so necessary at the present time.

CHAPTER 10

PSYCHOTHERAPEUTIC DEVICES

Numerous psychotherapeutic devices and techniques have been developed to give the patient understanding, comfort, and security and to enable him to live as full and rewarding a life as is possible. Progress in psychodynamics and in psychopathology has made possible not only new techniques but a better understanding of the older techniques and a better appreciation of the situations in which they may be utilized.

The kind of planned psychotherapy that may now be used was not formerly possible because of our lack of understanding of the psychodynamics involved. Early methods were primarily those of empirical psychology based on intuition and "common sense." The therapist was an authoritative prescriber. Accustomed to prescribing medicines for physical ailments, the medical practitioner used this familiar technique for prescribing for the alleviation of mental suffering. He received little help from the hit-or-miss psychological understandings of psychodynamics. Since the patient had developed his difficulties in a particular environment, an effort was made to interrupt or change the conditions under which he lived. Thus the patient was advised to take a trip, change his job, separate himself from his family, marry, or to bring about other major changes in his relationship to his environment. Since the patient seemed unable to plan his own living, the therapist took over the planning. He advised rest, prescribed exercise, joining a community group, or developing a hobby. In extreme instances a full daily routine was prescribed In addition, some effort was made to direct the patient's thinking and his emotional life. In general the therapist was dominant, and the patient was dependent upon his direction.

Despite the authoritative and directive atmosphere of these therapeutic situations, the therapists developed some techniques that at times brought satisfactory results. There was recognition of the fact that some individuals showed fear and anxiety in certain situations and that it was possible to desensitize them to these situations. It was also recognized that the patient's responses to certain situations were out of keeping with his intellectual capacity and that education or reeducation could result in more satisfactory living. In addition, the therapists saw that patients could be supported and relieved of their symptoms by suggestion and persuasion and that the patients derived some relief merely from talking about their problems. Out of these

recognitions developed the therapeutic devices of catharsis, suggestion, hypnosis, persuasion, desensitization, and reeducation. The fault in these treatments lay not in the fact that the devices were useless but rather in the lack of understanding of psychodynamics, the inadequate information concerning additional techniques, and poor understanding of the circumstances in which the known devices could be effectively used and the most skillful method of using each of them.

The growth in understanding of psychodynamics began with Freud's development of the theory and practice of psychoanalysis. This resulted not only in the appearance of the technique of free association and transference but in a stimulating interest in the study of depth psychology. Later, when Adolph Meyer developed the psychobiologic approach, the somatist and the mentalist came closer together, and the holistic concept resulted in the improvement of psychotherapeutic techniques. Then psychological studies in personality development and psychodynamics supplied new understandings, and the learning theorists and experimentalists began to provide explanations that were valuable for the development of psychotherapy.

All the devices of standard psychotherapy may actually be recognized in the development of psychoanalysis. The first method used by Freud was that of cathartic hypnosis. Freud had been trained as a neurologist, and it is not surprising that his first effort in psychotherapy should be one in which the physician does something to the patient. This cathartic hypnosis was a kind of purging which enabled the patient to uncover the origin of his symptoms and to discharge his repressed feelings. The method disclosed the fact that hysterical symptoms had their origins in emotional disturbances of the past. It showed also that these events could be repressed from consciousness and that their recovery provided the patient with relief. Freud discovered, however, that the performance had to be repeated again and again and that the relief was only temporary. This failure of the relief to last was believed by Freud to be due to the nonparticipation of the ego, or the critical faculty, during the hypnosis. He therefore was led to search for a method that would enable the patient to retain the full function of his conscious mind while facing the repressed material. Giving up hypnosis, he attempted to get his patients to call up the repressions through waking suggestion, but he was soon convinced that the patient could not be forced by suggestion to reach back to his repressions. He did note, however, that the patient derived some benefit from the catharsis that ensued, and this discovery led him directly to the method of free association.

In this method the patient is required to say whatever enters his mind without selection of material or attention to logic. By this device Freud believed that he had attained the primary objective of having the repressed material brought forward in the presence of the ego, or the critical faculty. The conscious defenses against the repressed emotions would be eventually

overcome by following the rule of saying everything that come to mind no matter how painful, embarrassing, or unimportant. In this connection dreams became important because of the associations they aroused and because they indirectly led to the repressed material. As in cathartic hypnosis, both the recovery of traumatic experiences and the discharge of emotions associated with such experiences were the essential features of the therapy. The method was slower than hypnosis, since the recovery of repressions and the discharge of emotions occurred in smaller amounts and over a longer period of time. However, an additional and important advantage was being realized. Taking place in the ego were permanent changes which resulted in an increased ability to bring painful events to conscious formulation and to deal with emotional attitudes in a more constructive manner. This kind of ego influence had not been possible in the cathartic hypnosis.

Finally Freud made what is frequently called his greatest discovery, the transference technique. He noted that the patient transferred to the analyst the feelings for persons in authority and conflicts with them which he had experienced in childhood, particularly those reactions which he had to his parents. The patient relived his neurotic past in his relationship to the analyst. This milder edition of the patient's real life neurosis Freud called the "transference neurosis." By proper handling of the transference situation, the patient was then enabled to deal with small quantities of the emotional tensions that had been impossible for him to bear and which had consequently been repressed. A more methodical training of the ego was now possible, and the technique provided for the possibility of gradually enabling the patient to deal with anxieties in the transference situation. The interpretation of material brought forward in the analysis as well as the development of discriminations became important in the process of achieving permanent changes in the ego necessary for the completion of satisfactory analysis. In the development of psychoanalytic therapy, then, one is able to trace the use of catharsis, hypnosis, waking suggestion, desensitization, and reeducation. Even in the transference situation the patient is gradually being desensitized as he acquires practice in dealing with his anxieties, and the permanence of his recovery depends upon his emotional reeducation.

During the period of this development, psychotherapy became less directive and authoritative. The hit-or-miss procedures of the very active therapist were frowned on, and the therapist took a more passive role. The therapeutic devices of suggestion, hypnosis, and reeducation fell into disrepute and were referred to as being related only to supportive treatment or used for symptom removal.

Recently a number of conditions have brought these problems into better focus. In the first place the extension of psychotherapy to the milder personality disorders has shown that the kind of insight therapy called for in depth analysis is not necessary for all disorders. Then, too, for some patients there

is not sufficient time or financial resources to provide for such treatment. Finally it is realized that in some instances only supportive therapy is possible. None of these statements implies that supportive therapy is generally preferable to insight therapy but only that in some instances it is sufficient or all that is possible. In addition to these facts it is now more generally recognized that the patient must be finally prepared to live outside of treatment and that the therapy is a preparation for satisfactory living. Psychological studies in learning and psychodynamics have tended to clear up the role of reeducation in therapy, and emphasis placed upon synthesis in the psychobiologic school has had a healthy influence. Perhaps of greatest importance are some of the more recent changes in psychoanalytic therapy. The realization that the recovery of memories is less important than the progressive growth of the ego through emotional training has been particularly stimulating. Attention was first called to this point by Ferenczi and Rank (1925) and has been exceptionally well presented by Alexander and French (1946). The latter authors have also called attention to the need of flexibility of procedure in psychotherapy.

The remainder of this chapter is given over to a discussion of the psychotherapeutic devices of catharsis, suggestion, hypnosis, persuasion, desensitization, and reeducation. It is not implied that any one of these may be used as a primary psychotherapeutic technique. They are presented in part for their historical significance and in part because the principles involved in each are utilized at one time or another in all psychotherapeutic endeavor.

CATHARSIS

One of the oldest and most important devices of the counselor or psychotherapist is that of catharsis. Everyone will recognize to some extent that simply stating the problem to a parent, teacher, or friend may have beneficial effects upon the speaker. In part this effect may be due to the fact that there has never been a clear organization of the thinking on the problem, and the actual verbalization of the thinking gives it a character of objectivity. Other cathartic values may accrue for a variety of reasons. The verbalization of the problems may provide the possibility of developing a number of different perspectives for the observation of these difficulties. Also the aeration of the material in the atmosphere of a permissive and understanding listener may reduce the affect that has been associated with the material. The Catholic Church has long recognized in the technique of confession the values of catharsis. One of these values lies in the opportunity for the individual to talk out his problems under a certain defined type of acceptance; another value of the confession is the freeing of the individual from feelings of guilt.

Freud's first method of therapy was that of cathartic hypnosis in which the discharge of emotions was considered to be of great therapeutic value.

Recognition of the fact that catharsis frees the individual from fears and guilt feelings and brings to light deeply buried attitudes has increased the realization that catharsis is important to practically any type of psychotherapy. Nondirective therapy, play and release therapy, as well as the psychodrama and group therapy have found various ways of using catharsis for therapeutic results.

The ways in which the catharsis is used will be evident in the discussion of the various special methods of treatment. In all therapeutic situations some provision must be made to allow the patient to aerate material freely and fully since such ventilation of conflict material is essential to any type of psychotherapeutic program.

In the handling of the catharsis a number of important points must be considered. The principal problems associated with an emotional illness are frequently those of which the patient is intensely ashamed and which he therefore finds great difficulty in discussing, but worry about them so fills his mind that the need to tell somebody about them is desperate. As this material floods over into the conversation, the way in which it is first presented is apt to be influenced by the patient's inhibitions, repressions, and defenses. People in general hesitate to ascribe their difficulties to mental or emotional causes. The patient is, therefore, likely to present conventional reasons for his illness and to talk about such topics as overwork or physical disabilities. Every therapist is familiar with the fact that frequently the first material verbalized by the patient has little to do with the real problem. The real problem may have been withheld from the therapist deliberately because the patient is ashamed of it, or it may not have appeared because the patient is actually unaware of it. Consequently, one must be careful about coming to hasty conclusions regarding the dynamics of a particular situation and give the patient every opportunity to develop the material freely and fully. It is not necessarily true that the principal reasons for the patient's difficulty are always hidden from the therapist, but care must be exercised to prevent the acceptance of superficial or conventional materials. Experience will help one to discriminate between cases in which the submerged material is of great importance and cases in which the present worries and difficulties are paramount.

The role played by the therapist in the catharsis will vary considerably depending upon the type of problem presented by the patient and upon the theoretic beliefs of the therapist. Participation by the therapist may vary all the way from no participation at all to extremely active participation and direction. In all situations, however, nothing facilitates the catharsis so much as the establishment of confidence in the therapist and particularly in his discretion and tolerance. The patient must be made to realize that the therapist is tolerant and uncritical and that he accepts the patient's statements at their face value. The successful managing of the early part of the catharsis is primarily dependent upon the ability of the therapist to encourage the free

expression of feelings. The flow of hostility and anxiety, the feelings of guilt, the ambivalences and indecisions must be allowed free expression. The therapist must therefore create an atmosphere in which the patient can express these feelings and accept them as a part of himself. This is best accomplished by not responding to the intellectual content of what the patient is saying but to the feeling which underlies it. It is in this way that non-directive psychotherapy begins to provide the opportunity for emotional understanding and growth. Psychoanalysis has used hypnosis, waking suggestions, free association, and the transference, and in all these techniques the catharsis has been an essential part of the therapeutic process. Classical pyschoanalysis, however, may be said to be more like a purging than a catharsis, the attempt being to unearth all unconscious traumatic experiences and to bring about a readjustment in the patient's attitude by making them conscious.

In the more direct objective therapies great care must be exercised for the proper handling of the catharsis. The therapist must be careful not to be led astray by statements of superficial problems or by conventional explanations of the patient's difficulties. Time must be allowed for the patient to realize the receptive, tolerant, and uncritical attitude of the therapist. When satisfactory rapport has been established, the patient may begin to communicate experiences and attitudes that have been associated with great tension. The therapist must then be able to recognize points of stress and developing tensions in the patient and must refrain from attempting to force from him communications which to him seem indiscreet or intolerable. If the therapist exercises pressure that goes beyond the patient's tolerance, resistance and negativism may develop to such an extent as to make the therapist no longer useful to the patient. In extreme instances of such persistence, the resistance and negativism may be carried into other therapeutic situations, even though the new therapist shows no such demanding tendencies. It is true that in some situations the treatment is expedited by developing each interview to the maximum tolerance of the patient, but even where time is extremely important, it is better to stop short of the patient's tolerance than to risk going beyond it. The understanding of this delicate balance is one of the distinguishing features of the good therapist and is gained only through experience.

As has been pointed out earlier in this text, a variety of techniques are available for the understanding of the dilemma in which the patient finds himself. A most important part of this understanding, however, must come from the patient himself. If one is to understand why the patient became ill, why the illness takes its particular form, as well as the meaning of the symptoms, one must understand what the personal meaning of a variety of life experiences has been to the patient. One must know further how these experiences are related to each other. Since the symptoms represent acquired

patterns, it is important to search for situations of tension in which similar symptomatic patterns have been utilized. It may be possible to reconstruct a series of such reactions beginning early in life as mild tendencies and developing progressively into more elaborate and fixed reaction patterns. In some instances a gradual development of a fixed reaction pattern may be easily recognizable. If, however, the pattern is one that began very early, the evidences of development of the trend may be inconspicuous, its increased importance being due to its progressively greater incongruity with the level of adjustment expected at the advanced age of the patient. Since such series of life experiences may leave undischarged tensions in their wake and thus serve to increase insecurity, it is important to reveal them in the catharsis. The relationship of various experiences to each other and to symptom formation must, however, be established without too much interpretation or distortion on the part of the therapist.

The properly handled catharsis may, therefore, be said to be one in which the therapist has succeeded in getting the patient to discuss his life experiences intimately and thus to discharge emotional tensions, reveal unconscious attitudes, provide the basis for objectivity and perspective, and to experience a satisfactory and secure interpersonal relationship in the face of these revelations. The extent to which such a device may be used to provide support and satisfactory relationships and the extent to which it may be used for insight will, of course, vary tremendously.

SUGGESTION

The use of suggestion and reassurance to bring about better adjustment to living is older than any recognized form of psychotherapy. It enters into almost all situations in which one person attempts to influence another. Even when there is no logical or factual basis for the acceptance of the ideas and attitudes of others, people seek assistance in solving their problems and adopt the outlook and method of procedure presented to them. In the complicated civilization of the twentieth century, much action is the result of advertising, propaganda, leadership, and religious programs, and frequently the action takes place with no examination of the logic of the program. Psychological studies have repeatedly shown that beliefs are formed and held to on the basis of emotion and desire. In other words, man believes very easily what he wants or needs to believe. In general, individuals need to be secure. They need to believe that others accept them and have affection for them and that they are safe from hurts and threats of hurt. Programs that appeal through this need will find numerous followers, whether they have logic or not.

An examination of the conditions of suggestibility will show the therapist to be in a favorable position to use it as a technique. People in general wish to be liked and accepted by others, and they discover that one of the ways of

accomplishing this is to be agreeable and amiable. In this framework people are likely to be suggestible and accept the ideas offered them, not because of the logic of the appeal but because of the satisfactions derived from being in agreement with others. In much the same way, the person who is fearful of the unpleasantness of disagreeing with others may accept ideas without regard to logic. The desire to appear logical in the eyes of others may also set the stage for the acceptance of suggestions. Under these circumstances the ideas of others, especially if they are presented emphatically and authoritatively, have a good chance of being accepted. Such an acceptance may prevent the person from feeling that others consider him stupid or unable to appreciate logical processes. In other instances those who have taken refuge in helplessness and freedom from responsibility may be readily suggestible since they feel more secure when they are being guided by someone who has prestige.

The therapist, because of his prestige and authority as well as his helpfulness and protectiveness, is in a position to exert unusual influence on the attitudes of the patient. The relationship is in some ways comparable to that of the child-parent relationship, as many patients are anxious to please the therapist, to be agreeable and amiable with him, and to have him protect them and solve all their problems. Under these circumstances suggestion may play a role in any therapeutic situation whether the therapist desires it or not or in some instances even when he is unaware of it. Thus the general medical practitioner may suggest to his patient that the medicine he has prescribed will have the desired effect, and the surgeon may be utilizing suggestion when he prepares his patient for the operation by informing him that he is in the hands of capable individuals and that success is to be expected. Undoubtedly the manner and bearing of the psychotherapist will be of great importance. The patient comes hoping for relief from his insecurities; and consequently indefiniteness, uncertainty, and undue gravity on the part of the therapist may increase the patient's insecurity. Constructive suggestion may decrease his apprehensions and forebodings and make him more secure with himself and with the therapist.

Autosuggestion. Autosuggestion, or suggestion with the emphasis upon subjective elements, was popularized by Coué, who achieved success with certain kinds of patients. Coué's method was to have the patient repeat over and over again such phrases as, "Day by day in every way I am getting better and better." In this way Coué believed that the patient would get the continued application of encouragement to himself even in the absence of the therapist. The foundation of his system was that, if imagination was in conflict with the will, imagination would win; and a vivid imagination of a state of health would exclude the pathological reactions. He called attention to the fact that there are many situations in which reason and will fail, but imagination and suggestion may be effective. He was undoubtedly correct

in pointing out the limitations of intellect and will power, and his emphasis on emotion, imagination, and optimistic representations was deserving of some attention.

There are, however, many objections to autosuggestion as presented by Coué. In the first place, it must be recognized that only a small percentage of patients would continue to repeat such a program unless they were convinced from the outset that they were on the road to recovery. In addition, the superficiality and monotony of the method make it useless for many people, and the various ritualistic devices and auxiliary practices that were associated with the procedure tend to relate it to mysticism. Since recovery is obtained through suggestion, the method is open to the criticism of other suggestive therapies, particularly the lack of insight obtained by the patient and the fact that the recovery may be only symptomatic. The method is not currently used as a therapeutic technique, but its principles have served a valuable purpose in calling attention to the overuse of the appeal to intellect and will power by many psychotherapists.

Spiritual Healing. The history of spiritual healing in which practically all religious groups have participated serves to call attention to the power of suggestion. From the earliest time there has existed a profound belief in the power of spiritual forces to correct abnormalities. In situations where certain physical phenomena such as seizures, fainting spells, convulsions, paralyses, and sensory losses have been functional in origin, it has been possible to remove the symptoms through the use of powerful suggestion. The miracle cures of such hysterical patients were dependent in part upon the fact that the patients had knowledge of others who had been cured under similar circumstances. There are few applications of this technique in scientific psychotherapy, the nearest perhaps being Forel's (1907) attempt to treat alcoholism by religious conversion. Although Forel's results compare favorably with the results of other treatments of chronic alcoholics, the evaluation of the results is extremely difficult. The religious cures point to the power of suggestion, but in general we believe that we have better techniques of suggestive therapy and certainly therapies in which the underlying principles are more intelligently and understandingly applied.

Example of Suggestive Therapy. The more usual employment of suggestion in psychotherapy may be recognized as having developed, in part, from the indirect methods of psychiatrists and neurologists in the past. In treating certain functional disorders, the physician frequently agreed with the patient's belief that the disorder was due to some physical cause. Many hysterical patients were relieved of their symptoms by dramatic treatments ostensibly directed to physical causes. The indirect suggestions most frequently used generally included a spectacular aspect, a certain amount of unpleasantness to the patient, and some rationalized relationship between the agent employed and the patient's own ideas of his illness. The following examples from

Dorcus and Shaffer (1950, pp. 585–586) will illustrate such treatment by the use of electricity, bad-tasting medicine, and painful stimulation.

> A patient who was suffering from a paralyzed right arm without any neurological basis for it came into the neurological clinic where he was examined and the nature of his disorder discovered. He was not told the facts (that there was no organic basis for his illness), but was simply assured that the physician knew what was wrong with him, that the nerves to his arm were blocked in some way and that it would be necessary to force an impulse through the nerves to the muscles in order to remove the block from the nerves. He was then taken over to the electrical apparatus and given a series of severe and painful electric shocks over the nerves of the arm and hand. These electrical stimuli, of course, produced violent and rigid contraction of the muscles involved, which the patient could see. He was then assured that the electrical impulse had removed the block from the nerves and that he could now use the muscles, which he proceeded to do. He was further told that if there was any sign of returning paralysis, he should come back immediately to the clinic for further treatment of the same kind, but that if the muscles continued to function well, this would probably not be necessary. While ostensibly done in a kindly way, the treatment was made as painful and as unpleasant as possible, so that the patient would have no desire to return for further treatment. Thus the cure was made more painful and disturbing than the illness itself. This particular patient has had no return of this symptom over a period of several years but has, from time to time, developed other symptoms of hysteria, such as blindness, fainting spells, and loss of voice. All of these were treated along similar lines, sometimes with success and sometimes without. It was the opinion of the physician in charge that this particular case never merited any more intensive treatment than was administered.
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> In a similar way, a girl, who had over a period of years a series of convulsive seizures, gradually becoming worse and more frequent and occurring whenever she had any unpleasant duty to perform, was completely cured of her symptoms in a period of a few weeks by the following method. She was told that her condition was due to her nerves and was given a bottle of asafetida which was described as a powerful nerve tonic that would build up her nerves very rapidly. She was to take a teaspoonful of it three times a day for a week and should cease having any seizures within that time. It was explained that the seizures probably would not come back, but that if at any time she felt one coming on, she should take another teaspoonful of the medicine, which would prevent its occurrence. If she failed to do this and a seizure did occur, it would then be necessary for her to take it three times a day for a week as in the beginning. Again it will be noted that the treatment was made both

spectacular and unpleasant to the degree that the patient was impressed by it. Seizures stopped within three days, and she has never had a recurrence of this symptom.

A patient with neurotic vomiting of pregnancy was seen in consultation in a general hospital. Circumstances precluded any intensive psychotherapy. The physician told the patient that he knew what was wrong with her, that her stomach was irritable and upset and that he could give her some medicine that would relax her stomach and stop the vomiting immediately; but this would have to be given in her vein. A 10-cc. Luer syringe with a very dull needle was used to inject 10 cc. of normal saline solution intravenously. The neurotic vomiting stopped and did not recur.

In some instances even operative procedures have been used to obtain recovery from symptoms of functional illness. Since some neurotic patients may become addicted to the operative procedure just as they may become addicted to drugs, all these methods are generally inadvisable. While it is true that one may occasionally find a place for the use of electricity, bad-tasting medicine, and other suggestive devices, one needs to exercise careful discrimination in the use of such methods. There are times when the method may be of assistance in differential diagnosis and as a medicolegal aid to show or remove cause for suit for damage. In such cases it is important to realize that people with organic brain lesions frequently have superimposed a structure of functional symptoms not to be accounted for on the basis of the lesion.

Criticism of Suggestive Therapy. The most obvious objection to suggestive psychotherapy is that, although symptoms may sometimes be removed, it is likely that relief will be only temporary and that symptoms of another kind will appear. The therapy, in other words, is symptomatic rather than etiological. The therapy is superficial rather than deep, and consequently recovery is only partial. The chief difficulty is that the therapy does not allow the patient to develop any insight which might enable him to understand himself and to prevent later difficulties. In all serious conditions when the patient still has deep reasons for his illness, it is likely to be ineffective.

Kraines (1948) has taken the position that the value of suggestion is shown, not in symptom disappearance, but rather in the wholesome reorientation of the patient's general attitude. He believes that constructive suggestion may relieve emotional tension by directing the patient's attention away from his difficulties and toward outward and more pleasant possibilities. He therefore finds suggestions made on the basis of a knowledge of the personality factors involved and of the statistical probability of recovery to be worth while. Diethelm (1950) believes that suggestion is most effective in situations where the symptoms are not based on marked personality involvement. He notes that success will be more frequently obtained with shell shock, anxiety states after accidents, and conversion states of recent and superficial origin.

In general, suggestion has been most effective with the immature, people

of low intelligence, and people with hysterical symptoms. For those who do not want a reason but prefer a sign, it may be helpful. Certainly it plays an important role in many therapeutic aids such as massage, baths, electrotherapy, light treatments, and mild medicines.

PERSUASION

While there is no longer any therapeutic approach that could be called persuasion, it should be recognized that the use of persuasion as described and practiced by Dubois and Dejerine has had considerable influence on the development of psychotherapy. This short statement regarding persuasion is therefore presented for purposes of orientation.

The development of psychotherapy was greatly influenced by Dubois and Dejerine whose therapeutic theories, although not identical, laid the groundwork for therapy by persuasion. Dubois's position, described in a book that was published in 1907, was in opposition to the suggestion therapy, which had become popular mainly through the efforts of Bernheim. Dubois took the position that the patient should develop critical-mindedness and a sense of independence as defenses against suggestibility. He was aware of the danger of the treatment of symptoms and concerned himself with a rational approach of appeal to the intellect and the will. He emphasized the importance of encouraging and moralizing conversations and reasoning as to the nature of the symptoms. The therapy was directed to enlightening the patient concerning false ideas and bad mental habits on which the symptoms depended.

Appel (1944) has pointed out that this theoretical emphasis on rational and moral factors makes it more logical to refer to his therapy as rational psychotherapy or moral suasion. Dubois did not give much attention to emotion in this theory, and his rational and logical short cuts to emotional problems were far from adequate. Despite this fact, he was eminently successful with his patients, and to some extent this success was apparently related to facts outside his theory. Although his theory insisted that one should concentrate on changing the system of ideas through moral suasion, he also said that the possibility of the cure must be emphasized from the beginning of the treatment. It is obvious that in practice his success was not due entirely to his appeal to reason but that he appealed to emotions and unconscious factors and that his personal influence and emotional support were of considerable value.

Dejerine (1913) pressed the point that the psychoneuroses were not developed through suggestibility, wrong ideas, and weakened will, but that they depended rather upon emotional shocks. His therapy was aimed at the liberation of the personality from the harmful emotions. As with Dubois, the patient was given assurance that he would be cured and he was questioned about special emotional difficulties or traumatic incidents. Dejerine insisted,

however, that the patient was not cured by reasoning and logic, but by the affective relationship with the therapist. This emotional relationship resulting in confidence in the physician was, for him, the factor that implemented persuasion. His therapy gave attention to the reeducation of bad habits, and encouragement was employed to give the patient confidence. Catharsis was important since confession was necessary for the liberation of the emotion. Thus, while in suggestive therapy the patient is believed to get well because the doctor says he should and for Dubois he recovers because he believes he can, in Dejerine's persuasion the patient gets well because he has been convinced there is no reason why he should not be well.

These therapies are primarily directive and authoritarian and provide the basis for the use of catharsis, desensitization, and reeducation. Although the therapies developed in opposition to suggestion, the therapists did not hesitate to use suggestion when it might be helpful.

The regular predisposition of the physician to prescribe a treatment, coupled with the success of clinicians like Dubois and Dejerine through the use of a primarily directive therapy, set the stage for a further development of treatment by authority, will, direction, and regulation. Payot (1909), Walsh (1913), Vittoz (1913), and Barrett (1915) have described therapies in which will, direction, and regulation have been given prominence.

The therapies that developed under the influence of persuasion were primarily those which made the intelligence of the patient the chief tool of the treatment. The appeal is to the reason and the self-respect. An attempt is made to persuade the patient of certain causes and effects and to encourage him to revise certain of his ideas and behavior patterns. The method involves an intellectual explanation of the patient's symptoms or the reason why he has the particular symptoms. It consists of an attempt to induce the patient to use a more logical approach to the problems of living. We have discovered, however, that the intellect is not so powerful a tool as we might like it to be. The intelligence is in most instances secondary to the emotion in determining the behavioral pattern. In fact we frequently find that logic has been used to justify behavior that has already been emotionally determined. Persuasion alone, then, is likely to fail in psychotherapy. Having recognized this fact, we tend sometimes to proceed as if intelligence and reason could not be used at all. Judicious and careful use of persuasion in cases of mild neuroses may be quite valuable. Unfortunately the unskillful use of persuasion simply results in an argument in which the therapist attempts to impose his view on the patient.

HYPNOSIS

Hypnosis, the descendant of mesmerism, has had a very checkered life in the history of psychotherapy. The mesmeric séance included many of the elements of religious conversion and magic, but running through it was an

unintentional use of suggestion on the basis of which was built up the technique of hypnosis. Braid proved that no mysterious animal magnetism was involved in the process and originated the term "hypnosis." The method of hypnosis was applied to the treatment of hysteric patients by Charcot, Bernheim, Leibault, Janet, and others. It provided an important starting point for psychotherapy in general and particularly for psychoanalysis. Breuer and Freud, along with others, used hypnosis to remove such symptoms as paralyses, spasms, anesthesias, and amnesias. Although Freud later discarded hypnosis, it was his original method for obtaining the important catharsis The method fell into disrepute partly because it was used by charlatans and partly because further developments in psychotherapy indicated that it was most effective for symptom removal. Since in most instances the symptoms are expressions of underlying and deep-seated maladjustments, they tend to recur or to be replaced by other symptoms equally incapacitating. Recently better understanding of the therapeutic possibilities has led to a revival of interest in the use of hypnotic therapy.

The classical uses of hypnosis include the creation of analgesic states, the removal of symptoms, the breaking through amnesias, diagnostic procedures, and posthypnotic suggestion. The method is still used occasionally to alleviate pain in operation and delivery, and many therapists have had success in the treatment of such conditions as dysmenorrhea, frigidity, and impotence. Hypnosis may be useful both with regard to diagnosis and as an aid in the attack upon causes. Since functional conditions such as blindness, deafness, and cutaneous loss of sensation can be studied under hypnosis, it is sometimes possible to determine through it whether organic disturbances have been feigned.

Hypnosis has perhaps had its widest and most effective use in the recovery of material lost in periods of amnesia. Many patients with hysterical fugues, who have been unable to recover the lost material consciously, have managed when hypnotized to regain the lost memory and to reintegrate it with the conscious material. Posthypnotic suggestions have then enabled them to carry all the material over into the waking state. Because it is sometimes possible in hypnosis to recover early dream memories and memories of early life associations, the technique may be used as an aid in other therapeutic approaches.

Today hypnosis is more frequently used in combination with other therapies than as a separate therapy. As a method it has many limitations and contraindications. In addition to the danger of its use for the treatment of individual complaints or symptoms, the method tends to cultivate dependent and infantile attitudes, since initiative and responsibility are taken away from the patient. In general, the psychotherapeutic situation should foster the understanding of motivation, reality, and constructive interpersonal relation-

ships. The hypnotic situation does not provide the opportunity for such insight and understanding.

The use of hypnosis requires considerable caution both with regard to the selection of patients and the selection of the therapist. It can be dangerous when used by inexperienced persons. Some patients who show a very high resistance to hypnotic suggestion may be thrown into panic by attempts to hypnotize them. With the schizophrenic, the technique could be particularly dangerous, especially if the patient is verging on a catatonic episode. For many schizoid personalities the experience may be used as a focus around which delusions and other symptoms are developed, and for those who are ripe for the development of beliefs of mysterious influence the hypnotic situation may tend to crystallize their developing delusions. Therefore those not schooled in recognizing early schizophrenic signs may do great damage through the use of hypnosis. It should also be noted that, even when the choice of the patient is satisfactory, suggestions must be properly given and removed or the patient's later behavior may be inadvertently influenced.

Although the method has not been successful for the treatment of the psychoses or the obsessive-compulsive states, some hysterias and anxiety states have been successfully treated. War and occupational neuroses have been treated successfully by hypnosis, as have neurotic complications associated with organic disease. An exhaustive treatment of the use of hypnosis has been presented by Wolberg (1948).

Hypnoanalysis. A number of important therapeutic realizations have enabled therapists to recognize greater possibilities in the use of hypnosis. First, real progress has been made in the establishment of a meeting ground between analytic and nonanalytic therapists. This has come about as a result of the developing maturity of both groups. As psychoanalysis became more secure, the analysts gradually found it possible to differ with some original Freudian principles and to modify classical procedures when it seemed wise and reasonable to do so. At the same time psychoanalytic opponents have found it increasingly possible to accept and use the advantages provided by the psychoanalytic theory without the necessity of accepting the whole of the theory or the methods of treatment. In addition to these advantages, therapists, in general, have recognized the importance of economy in time in the therapeutic procedures. With regard to hypnosis and psychoanalysis, this has resulted in the realization that for some patients the time factor makes the classical analysis impossible, and simple removal of the symptoms by hypnosis is not satisfactory. A combination of the methods of hypnosis and psychoanalysis might, however, be efficacious. Various combinations of hypnosis, psychoanalysis, and reeducation have consequently stirred the interest of many therapists and have resulted in a technique known as "hypnoanalysis" or "hypnotherapy."

The technique has developed as a result of the work of many people. It will be remembered that Freud was disappointed in the results of the hypnotic method and came to the conclusion that the superficial nature of the outcome was due to the fact that, although direct access to the unconscious was possible, the ego was completely excluded from the process. Freud found that his subjects resorted to all kinds of subterfuges to prevent the integration of the material. Some patients would refuse to awaken after instructions to remember the trance experiences, while in other instances they awakened with an amnesia for the material presented by them under hypnosis, despite the fact that they had been instructed to remember everything that had happened. Practically all hypnotists, whether they have used hypnosis experimentally or therapeutically, have had similar experiences and have related the difficulties either to the choice of the subjects or to the inadequacy of their method. What has been even more difficult to deal with has been another experience which Freud complained of, namely, that the patient would acknowledge in a mechanical way the memory for the material of the trance state but that the awareness apparently had no effect on the waking life.

Recently various techniques for the directing of associations have convinced many investigators that it is possible to get participation of the patient's ego-defense system under hypnosis, and as a consequence the method tends to be used much more frequently, especially when the time factor is important.

Success with the method has been reported under a variety of circumstances. The age-regression studies have suggested the possibility of regressing the neurotic patient to the level of the beginning of his difficulty. The material verbalized during such induced regression is then integrated into the conscious personality. Much of this has been accomplished by the direction of associations and by direct question-and-answer procedure under hypnosis. The ability to get the patient to move back and forth between past and present in the hypnotized state has been helpful in enabling the patient to relive past traumatic experiences in the frame of the present personality structure. Success has also been obtained by inducing dreams and dealing with dream material under hypnosis. The technique is, of course, much more direct than is usual in psychoanalysis. That it was possible to get at early experiences and dreams under hypnosis has long been recognized, but what appears to be evident now is that in some instances it is possible to interweave past and present experiences in such a way as to bring about reintegration of the repressed past into the conscious ego.

This reawakening of interest in hypnosis has also resulted in the further realization that the method may be useful as an adjunct therapy. The method of the therapist may be that of psychoanalysis or distributive analysis and synthesis, but he may find in some instances that hypnosis may be a valuable

aid. For example, Schilder (1938), as an analyst, considered cathartic hypnosis unsatisfactory; nevertheless, he occasionally combined hypnosis with interviews from which he obtained an understanding of the patient's problem. In the interview he used dream interpretation and free association and gave over the last 15 minutes to a hypnotic session in which he gave interpretations of the origin and nature of the symptoms and suggestions that the patient would recover as insight was attained.

Hypnoanalysis became somewhat popular along with narcosynthesis as the treatment of acute war neuroses. In narcosynthesis the patient was given sodium pentothal until he reached a state of semisleep and released repressed feelings and forgotten experiences. In some instances hypnoanalysis was used for the same purpose. The patient was hypnotized rather than put to sleep in an effort to permit him to express his repressed fears and to relive his traumatic experiences.

Hypnagogic Reverie. Various modifications of hypnosis and hypnoticlike therapy have appeared for use under special circumstances. Hypnagogic reverie, described by Kubie (1943), is a technique in which a dreamlike state is induced by having the patient listen to the amplified sounds of his own breathing. The patient who is thus induced into a state of reverie may be told to signal the therapist when something occurs to him in relation to a problem. In some instances the therapist may take the initiative and ask the patient what he is thinking about, and in either of these situations the therapist may give suggestions to the patient. The reverie is assumed to be easier to interpret because it does not attempt to say as much as the dream and because it is not concerned with multiple meanings. In this way it is believed that information may be secured without the limitations attendant upon the interpretation of dreams. Further advantage is claimed for the method because there is less use of symbolic representation and better opportunities for dealing with remote and recent past experiences. Finally the position is taken that traumatic material is more readily accessible in the reverie because guilt and anxiety are less active. Most of these positions must be recognized as assumptions, and for many patients the method has serious limitations.

Oneirosis. Still another form of light hypnosis is presented by Winn (1939) as having special therapeutic possibilities. This method, called "oneirosis" (dreaming), requires that the patient be especially prepared for the experience by the establishment of a very permissive atmosphere. The concerns regarding hypnosis are allayed by telling the subject that he will be aware of everything that is going on, that he may signal at any time his desire to terminate the state, and that he will subsequently be aware of everything that has taken place during the trance. The advantages of the light trance over the traditional type of hypnosis are described by Winn as being in part due to the clearness of the subject's mind in the former state. He has called attention to the fact that positive suggestion cannot always rely on mechanical

obedience but frequently calls for intense activity of the mind. The recall of forgotten experiences, the reasoning out of problems, and the establishing of emotional conditioning are considered to be more easily obtained, since the light trance is structured for ego participation rather than for mechanical obedience.

In general, it may be said that interest has been reawakened in the value of hypnosis primarily because of the possibilities of its use in insight therapy. Hypnoanalysis, hypnagogic reverie, and oneirosis all proceed on the assumption that the methods provide opportunities for more than mere suggestive treatment.

DESENSITIZATION AND REEDUCATION

Throughout the history of psychotherapy, desensitization and reeducation have had prominent roles. Most maladjusted individuals react to certain situations or ideas with an exaggerated sensitivity, and consequently treatment must result in a desensitization to these areas. They also find it difficult to live harmoniously with themselves or others and consequently require reeducation. In fact, all learning and habit formation in the development of normal personalities involve sensitization and desensitization, learning and relearning. In their simplest manifestations, then, desensitization and reeducation imply nothing more than that which is involved in the normal process of living.

Since desensitization consists of attempts to enable the patient to be comfortable in the face of situations that have been highly charged and reeducation implies a retraining of his habits of response, the two processes become inseparable. Separate consideration of these techniques would therefore involve the duplication of material and the setting up of artificial lines of demarcation.

It is clear that situations or ideas which are traumatic for one person may not be traumatic for others. That is to say, situations to which some of us react with great sensitivity may occasion little or no sensitivity in others. The difference between the two reactions is to be found in the difference in the life history of the two individuals. The reason for the excessive sensitivity is to be found in a particular life situation or, more frequently, in a series of particular life situations. Certain situations have been associated with pain, shame, or insecurity; and consequently it is no longer possible to face these situations objectively. In many instances patients with good insight are still unable to change their reactions to the charged situations. Nor is it necessary to have recourse to abnormal phenomena in order to appreciate this fact. An intelligent and rational interpretation of the facts does not necessarily enable us to govern our emotional reactions in accordance with these facts. Actually we are more likely to develop our beliefs in accordance with our emotional

promptings. Persistent behavior of this sort has all the characteristics of a habit. In abnormal manifestations these habit patterns function as adjustment devices set up to evade a memory of a primary traumatic experience or avoid reliving a similar or associated one. They are, therefore, frequently called forth either by situations that are reminiscent of a primary traumatic experience directly or by a variety of associations that lead to the traumatic experience.

The development of specific fear responses shows some of the principles here involved. A child who has had no experience with animals may be quietly playing when a noisy and menacing dog suddenly descends upon it. The child may become badly frightened and flee in tears and anxiety. Following this experience the child may show anxiety to the approach of other animals as well as to various associated phenomena. Such fear and anxiety may become exaggerated or attenuated depending upon the child's other experiences. If the child is gradually introduced to animals in settings that are secure and peaceful, the fear response may disappear. If the dog and associated experiences are used to threaten the child, the fear reaction may be continued and may also become associated with neutral elements of the situation in which it occurs. The reaction may then spread by association processes and may eventually be called forth by stimuli only remotely and indirectly connected with the primary experience. These derived and indirectly developed fear reactions may persist in their own right, and in some instances they may remain traumatic even though the individual is desensitized to the originally feared object or situation.

Therapeutically, desensitization may be viewed as a retraining of emotional habit patterns; and the process consists in having the patient, under special circumstances, face traumatic situations again and again in such a way that the emotional response to them is gradually attenuated. The desensitization applies to both overt experience and to memories of traumatic experiences Thus the repetition of memories that are traumatic may result in desensitization.

While practically all therapies will find some value in desensitization, the methods used and the values placed upon the process will differ widely. For classical psychoanalysis, desensitization is always secondary to the major analysis, which is accomplished by free association and the transference. Nevertheless, a part of the value of the classical analysis is related to desensitization. In nondirective therapy a part of the emotional growth of the patient may also be related to the relief from trauma that was formerly associated with particular ideas and situations. Therapies that are more directive use the method more boldly. In such therapeutic situations, although it is recognized that maximum benefits will be attained by successful desensitization to primary traumatic experiences, some attention is given to desensitization to derived stimuli. Because of the tendency toward spread and diffusion to

the associated experiences, it is believed that desensitization to these experiences may be of some value even before one is aware of the primary experiences. Proceeding in this manner may be particularly necessary in view of the fact that the primary experiences may never be discovered. Thus the program may be aimed at desensitization to symptomatic reactions while the therapist probes to discover the original source of the difficulty. For many patients, however, such a measure may prove to be disadvantageous, since the patient may become sufficiently comfortable to refuse to participate further in the efforts to understand his problem completely. This is the same difficulty that presents itself in all symptomatic treatment and is, therefore, the reason that the method is frowned on by the classical psychoanalytic approach. Many psychoanalysts have, however, pointed out that for some patients the classical approach is neither advisable nor practical. They have also called attention to the fact that some patients who may later be treated by analysis may be successfully approached first by symptom removal.

It will be noted that the procedure here referred to is essentially one of unconditioning. An undesirable reaction is eliminated and replaced by a more desirable reaction by the process of unconditioning. While many problems may be successfully cared for in this manner, the method must be adroitly used in order to produce satisfactory results. The facing of the feared situation must be gradual and in the setting of security, or the emotional shock may be intensified rather than lessened.

Reeducation may be broadly viewed as the retraining of the individual in his habits of response to both situations and ideas. In the course of living, each individual is learning to respond to situations and ideas in a variety of ways. Some of the new learning is in conflict with the old and results in some revision in attitude and response or in reeducation. The actual program of reeducation may be viewed as an effort at the replacement of bad habits with better habits or the formation of new habits to replace habits that have been lost. In some instances it may be difficult to distinguish between education and reeducation, since one may be merely attempting to substitute adult reactions for infantile ones.

Considerable experimental evidence has been presented for satisfactory reeducation following organic loss. Thus, it has been demonstrated that habits once acquired and subsequently lost may be regained through a process of retraining, and parts of the organic mechanism may take over functions once performed by the destroyed part. Franz (1923), Lashley (1929), and others have supplied information regarding such processes of reeducation.

The maladjusted person who presents himself for psychotherapy has acquired habits of thinking, feeling, and acting which make it difficult to be satisfied with himself or to get on with others. Many such patients may get well or at least make a social recovery through a process of reeducation.

Such a reeducation may result in the substitution of adult for infantile reactions, the replacing of unhealthy habits of thinking and acting with healthy ones; or in simple social recovery, unsocial habits may be replaced by habits which are conventional and social.

Austin Riggs (1929) stands out as one of the therapists who were eminently successful in the use of methods of reeducation. Riggs was, in general, opposed to the psychoanalytic theory, although he recognized the importance of early experiences in the development of the psychoneuroses. He believed that neurotic behavior had a complex organization and was a disorder of a conflict within various levels of the individual, such as the instinctive, the reflex, the intellectual, the social, and the ethical. He pointed out that, in temperamental or overactive persons, emotional strains might result in symptoms, the meanings of which might not be understood by those who experienced them. The intensity of the overactivity might impair the intellectual functions and show itself in the psychoneurotic misinterpretations.

Riggs's therapy was directed to the psychoneurotic for whom he advised temporary environmental change. He believed that the patient should be removed from his vocational, social, and home environments, since it was in these environments that the stress developed. He believed that sanitariums like his own at Stockbridge would be valuable, since they provided a neutral environment away from the emotional strains of ordinary living. In this neutral environment the patient was acquainted with the fact that he needed reeducation and that it was necessary, in a sense, for him to go to school to learn the principles of satisfactory adjustment to life. The patient would have daily interviews with his doctor, but the entire hospital staff participated in the process of reeducation. The patient attended lectures and group discussions on the psychology of adjustment. A schedule of activities was provided to stress the importance of cooperation in social living and to serve the purpose of regularizing life. In this way the necessity of taking initiative and making decisions was minimized. The regimentation was utilized to distract and divert the patient and to help him to develop habits of social cooperation. It also afforded the opportunity to teach the patient to do things simply because they must be done rather than to avoid them because of dislike or disinterest.

The schedule provided for occupational activities, mental exercises, recreational activities, social events, and periods of rest and relaxation. This regimen ensured regular living and established a base for the retraining of the individual in his habits of thinking and acting. This retraining was accomplished primarily in the daily interviews with the therapist and in the special lectures, group discussions, and assigned readings. Throughout the course of the treatment, the personal magnetism and inspiration of Riggs are evident. In his writings, however, he was often stern, stoical, and dogmatic;

and unusual emphasis was placed on discipline, ideals, and the influence of reason, as well as upon social goals.

While he was very successful as a therapist, it is not surprising to find that some patients found it impossible to live up to his goals and ideals and that others suffered conscience as a result of his teachings. It should be noted that his success was attained in an excellent institutional environment where it was possible to set up a regimen that could not be approached in extramural practice. The procedures of therapy were overorganized, overregimented, and exceedingly directive and authoritarian and gave practically no attention to unconscious factors. Although some patients continue to improve under such a regimen, it is obvious that for many patients the therapy is ineffective.

There are, however, many forms of reeducation therapy that differ markedly from the technique as presented by Riggs. In fact, some kind of reeducation is to be found in all therapeutic techniques. The term has usually been associated with those techniques which proceed by the direct-interview method in which the therapist participates, to some extent, in the ordering of the events of the patient's living.

Franz (1923) has stressed a number of conditions which he considers to be essential to the success of such a therapeutic program. The first of these is insight or the capability of the individual to recognize his abnormality. The rest of the conditions include a desire on the part of the patient to get well or to change and confidence in the patient both in his ability to get well and in the therapist to help him overcome his difficulties. In general, these may be said to be favorable circumstances for any form of therapy. However, insight, desire to change, confidence in the self and in the therapist occur in varying degrees, and it would be difficult or impossible to classify patients as either having them or not having them. While we may agree that recognition on the part of the patient that he is abnormal or different from others may be a very helpful starting point, it should be noted that such a realization may be developed in the course of treatment. Similarly, while self-confidence and confidence in the therapist make for more satisfactory beginnings, such attitudes may be developed as the therapy progresses. In fact, the establishment of good rapport and confidence lies at the heart of all therapeutic situations.

Essentially the therapy of reeducation is one directed toward the formation of those habits of thought and action which are necessary for the normal individual. The degree to which the therapy utilizes explanation, interpretation, direction, desensitization, and the attempt to control or adjust the patient's environment will vary widely, depending upon the patient and the therapist. The direct objective approach is usually preceded by some more or less adequate history of the patient's life. When it is possible to get some idea of the areas of the patient's difficulty from the history, it is sometimes

considered profitable to introduce specific topics for discussion, thus providing the opportunity for the patient to begin the discussion of his own life experiences.

Not infrequently one may find the patient unable to discuss his problems because of the emotional tension accompanying them. In such instances it may be necessary to desensitize the patient or alleviate the emotional barrier before any program of retraining is possible. Thus problems of functional impotency, homosexuality, masturbation, physical inferiority, school failures, financial and business reverses may require desensitization before constructive reeducation can begin. Objective therapists have pointed out that not only have many of their patients learned to view such experiences with shame and the development of conscience, but they have failed to recognize the frequency of these experiences in others. People who lack sufficient diversity of contact with others and particularly those who have little opportunity to confide in others develop areas of sensitivity that make it impossible for them to make a satisfactory adjustment in times of stress. They are likely to accept the standard moralistic attitudes regarding matters which occasion shame. They tend to underestimate the incidence of these experiences and to view the conventional discretion of their friends as evidences of their innocence. In the area of sexual problems their sensitivities may be further increased since they begin to feel that others are aware of their practices; consequently, they withdraw from social contacts. Objective therapists believe that many such patients may be able to approach their problems with directness through desensitization and reeducation. Thus the attempt is to enable the patient to face his problems frankly and to give him the necessary data relating to the problems, at the same time encouraging him in formulating some tangible practical plan that may help him solve his problems. To what extent the therapist will use explanations or interpretations as well as to what extent reading will be suggested or environmental circumstances ordered will depend upon the inclinations of the particular therapist.

Explanatory and Interpretive Therapy. Reeducation usually involves some attempt on the part of the therapist to explain and interpret the material presented by the patient. While some degree of explanation and interpretation is apt to be included in any face-to-face interview situation, some therapists use considerable explanation and very little interpretation, while others are inclined to the opposite position. Consequently it may be helpful to distinguish between explanatory and interpretive therapies as they are used in reeducation. Explanatory therapy is an attempt to show the patient the mechanism of his symptoms. This is the type of therapy that was championed by Riggs. Some of his followers actively expounded the psychological principles, while others emphasized the method of guiding the patient's reading and helping him to understand the principles as he read about them.

Interpretive therapy, on the other hand, is more dynamic and biographical

and attempts to give understanding of the purpose of the condition. Explanatory therapy is primarily symptomatic, but interpretive therapy attempts to get at the meaning or significance of the symptoms. The latter method, therefore, has greater depth and consequently provides opportunities for the understanding and organizing of the personality. Greater skill is required for its use, since in interpretation the possibility of error is increased. In view of the danger of error in interpretation, this form of therapy has been most successful when the therapist has not been too formal or directive. Successful results have more frequently been obtained when the patient is given free opportunity to discuss whatever comes to mind and is encouraged to make his own interpretations. The therapist may help him guard against his rationalizations and faulty reasoning, but this is most successful when it is not allowed to interfere with the development of initiative and self-expression. It is apparent that these two methods overlap, and at times it may be impossible to distinguish one from the other.

Bibliotherapy. The reeducation of patients may, at times, be aided through the careful selection of reading material. While reading as a therapeutic aid is more frequently associated with explanatory therapy, the method is utilized in a variety of types of therapeutic situations. Since psychotherapy is often time-consuming and expensive for many patients, time must be saved or therapy is impossible. In the practical psychological approach, bibliotherapy, therefore, deserves consideration.

The therapist may encourage and direct the patient's reading for a variety of reasons. The reading may be used as a supplemental device to increase his understanding of the psychology and physiology of behavior. In this way the therapeutic situation may be extended beyond the conference hour. The patient not only may gain some important understanding from the reading but may come to the conference hour with material for discussion. In fact, reading that is carefully planned and intelligently done may make unnecessary much question-and-answer technique. The patient may now initiate many new topics. In addition, it may be helpful for him to receive some of his learning in an impersonal way, and his perspective is aided, since he no longer has only one source of reference for his understanding of behavior. In some instances the reading may be used for diversions, or to provide a contact with reality, or to provide satisfactions of specific tendencies in the patient. In other instances it may be used to effect a controlled release of abreaction of unconscious processes or to offer opportunities for identification and compensation.

Unfortunately there have been very few studies of the effectiveness of bibliotherapy, but in general it has been clear that the greatest advantage has been that of economy. Patients have been enabled to develop insight and understanding more quickly, since opportunities for progress become available to them in the absence of the therapeutic situation.

Notwithstanding the advantages that have been mentioned, it is important to note certain disadvantages and limitations of bibliotherapy. While it is possible to gain understanding through reading, it is also possible to accumulate misunderstanding Many people cannot read with understanding, and consequently their problems may increase in complexity. The possibility of developing cumulative sensitivities from the reading must constantly be evaluated. The sensitivities that develop in the therapeutic hour can be recognized and dealt with accordingly, but this is not true of the sensitivity that develops from reading. While it may be helpful for a patient to learn from his reading that many suffer from problems like his own, it is also possible that new difficulties may be suggested to him. The possibility of running away from his own problems and focusing on the theoretical aspects of the reading should also be recognized. In any case it is important to note that, when reading is indicated, it should be carefully planned to meet the particular needs and abilities of the individual patient and not simply prescribed by form. The reading is usually most successful when the patient takes the initiative, since the reading is then approached more thoughtfully and conscientiously. Appel (1944) has presented a bibliography of the kind of progressive reading that has been found useful.

Negative Practice. Certain kinds of behavior problems have been approached through a kind of reeducation called "negative practice." The method, a radical departure from the ordinary principles of learning, has developed from the theory propounded by Dunlap (1933). The basis of the method is linked with Dunlap's theoretical consideration of the role of repetition in the learning process. In ordinary learning theory, repetition is given not only an important but a specific purpose. It has been assumed that the occurrence of a reaction pattern to a given stimulus pattern increases the probability of the recurrence of approximately the same response to approximately the same stimulus pattern. While admitting that responses must occur for the formation of the habit, Dunlap has denied that they serve any purpose other than that of a vehicle. In his book on habits he has attempted to show that the function of the practice is to modify the response. Whether the response is fixed or modified by the practice, he believed, depended upon certain conditions surrounding the practice. A particular response may be more probable or less probable in the future depending upon these conditions. The accompanying thoughts, desires, and ideals were considered by Dunlap as important determiners of whether the habit would be fixed or modified. Since at the beginning of the practice the habit has not yet been formed, much of the practice must include responses which need to be eliminated rather than fixed. In practicing a billiard shot, for example, much of the practice consists of making errors. Dunlap has insisted that the ideas and desires of this practice period are of great importance. As the errors are made, the player determines not to make them in the future. The idea which

accompanies the response then determines the direction of the response. Dunlap reports that he first applied the principle to himself by breaking the habit of typing "hte" for "the" by practicing typing "hte" with the idea that this was what he was not going to do in the future.

In the case of such a habit as stammering, the attempt would be to teach the patient to stammer voluntarily in such a way as to imitate his involuntary stammering. Since the stammering is involuntary, he is unable to modify it. The voluntary habit may, however, be modified by appropriate practice. Thus the voluntary stammering must be practiced under the conditions of thought and desire necessary for the destruction of the habit. The application of the procedure is very difficult, and success is not to be expected without expert training. Some successes have been reported in cases of stammering, thumb-sucking, fingernail biting, and tics of various sorts.

In therapy that is specifically called reeducative, the emphasis is on support and relationship rather than on deep insight. Some explanation and interpretation of behavior and attitudes are provided in most instances and undoubtedly result in some insight. There is, however, nothing comparable to the deep insight of psychoanalytic therapy. In the case material presented the approach is quite active and directive. It must not be assumed, however, that reeducation does not take place in therapies that depend upon depth of insight and passive approach.

Examples of Reeducative Therapy. The following short case summaries taken from Dorcus and Shaffer (1950, pp. 600–603) illustrate some of the kinds of problems in which reeducation therapy was utilized.

> A boy of 22 with marked conflict over masturbation had been able until late adolescence, to diminish his sexual tension and to compensate for his feelings of inferiority and difference from others by means of an obsessional interest in athletics. A detached semi-lunar cartilage acquired in a football game sent him to bed for a considerable period of time and precluded further participation in active athletic outlets. Denied his compensating associations with others and his athletic triumphs and left more or less to his own devices for amusement, the problem of masturbation became acute. He was precipitated into a state of acute fear by the sudden appearance of a heavily bearded, markedly masculine individual in the doorway of a barber-shop where the boy was waiting for a haircut. Following this incident, such fear reactions recurred frequently, and he became progressively withdrawn because he feared people could detect his sexual habit by looking at him (he had been told this by his father when he was very young). He became obsessive, ritualistic and restricted to such an extent that he could no longer pursue his school work and a program for a career had to be abandoned. Most of the material of primary rumination was obtained from the father and from

physicians who had treated him previously. Since he was relatively unable to discuss his problems, selected items of interest from the history were taken up with him and discussed quite fully so that eventually he had a fairly complete knowledge of the anatomy, physiology and psychology of sex and the prevalence of the more common sex experiences. Simultaneously with this he was encouraged on a gradually extending program of socialization. In the course of a few months he was able to obtain employment, become self-supporting and more or less free from the panic states. Practically all of his rituals were dropped, and the fear reactions occurred at progressively longer intervals and were continuously milder and of shorter duration. This program was maintained until while staying at a Young Men's Christian Association he was assigned a room with an evangelical minister who moralized with him regarding such sexual practices. A rather serious fear reaction was precipitated thereby but disappeared rather promptly after a few psychiatric interviews in which the situation was again reviewed with him.

An adolescent boy, next to the youngest member of a large family, became much preoccupied, withdrawn from contact, irritable and cross and began to fail at school. Investigation showed a marked antagonistic family attitude toward this child and a lack of understanding of his emotional needs and drives. The primary topic of concern on the part of the boy was masturbation which he had feared would ruin his physical health and strength and which other people would be able to detect in him. In addition to this material, which he discussed with great tension, was material concerning the parents' dislike for him and his feeling of generally being repudiated by the family. He was encouraged to talk out each topic of concern frequently. Shortly after these interviews were started, a program of education or reeducation was instituted. The family relationships were talked over with him (the problems of the parents adjusting to each other and to their increased burdens by the advent of more children), and it was suggested that their reactions were as much a part and product of their life experience as his were of his own life experience. Several interviews were held with the parents in which it was possible to get them to see the boy's problems more in terms of his needs and to secure some cooperation, at least, in his program of treatment. Likewise the whole subject of sex was discussed with him beginning with a consideration of the anatomical and physiological factors and passing on to a fairly detailed exposition of the psychosexual conditioning experiences and their implications. At the same time his environment was so manipulated that employment was obtained for him at a library. He developed sufficient insight into his problem to be willing to cooperate, and a program of gradually extending social contacts was arranged. He became desensitized to his fear of others detecting his

masturbation, developed some self-assurance, made good in the group and although he continued to masturbate from time to time, he shed all of his tension about it and became a productive, happy, successful boy at school. A plan of mutual tolerance at home permitted him to adjust without too much difficulty there. The above outline of treatment is sketchy, but the general principle is fairly clear.

An attractive woman of thirty, the mother of four children, had been precipitated into a psychosis by the birth of her second child. As the psychotic trends crystallized, she developed a somewhat systematized paranoid reaction which enabled her to adjust outside of a hospital between her pregnancies. Following the birth of each of the children she became more diffused and more disturbed. After the birth of the fourth child she attempted suicide by cutting her throat as a result of which she became a patient in a psychopathic hospital. Her primary topics of preoccupation were concerned with, first of all, the loss of her beauty through giving birth to a series of children although she had managed to keep a rather good figure; second, she was much disturbed by numerous amorous advances made to her by men, other than her husband who was himself a handsome, narcissistic, aggressive individual; third, she felt that through her original mental illness she had lost the love and confidence of her husband; fourth, the husband was over-dependent emotionally upon his parents and there had been many conflicts between the patient and the in-laws; fifth, she felt by her suicidal attempts she had somehow authenticated her inferiority and had established it more or less indelibly. All of these topics were talked over with her in great detail. In the beginning she had marked emotional reactions to them, but frequency of repetition and thorough discussion with a psychiatrist who accepted them objectively and without criticism enabled her eventually to come to a point where she could talk about them without undue emotion. At the same time it was pointed out to her that she had not lost materially her physical charms. This aspect of the situation was reenforced by an operation for repair of the perineum which had been somewhat relaxed and by a sterilizing operation which assured her that there would be no further pregnancies. The amorous advances by men were discussed with her in terms of their being, in a sense, highly complimentary to her in that they indicated her physical attractiveness, charm of personality and femininity. It was also discussed in terms of situations which she could handle fairly readily as she had demonstrated by her management of them in the past. The delusions of infidelity regarding her husband she was able to discuss in terms of a projection of her own fear of being unfaithful to him. It was pointed out that he was equally attractive as a man as she was as a woman and that neither one should stand much danger of losing the other. The husband certainly

had some reaction to her mental illness, but separate interviews with the patient and with her husband led eventually to a joint interview in which a general attitude was established that a mental illness was similar to any other illness, and that it need not be considered hopeless as far as recovery was concerned, nor did it of necessity carry any implication of psychotic stigma to the children. The family relationships were discussed with the patient and her husband separately and in joint interview, and they were able to work out a sensible program of separation from the domination of his parents. After all of this had been accomplished, it was possible for her to accept her attempt at suicide as a symptom of the illness she had been through and as not, of necessity, indicating any fixity of that illness nor any evidence of personal inferiority. The entire program of treatment occupied many months and consumed much time, but the end result was that an illness which had lasted approximately six years was concluded by a return of the patient to normal life. This level of adjustment has been maintained for many years. It was considered a very fortunate circumstance that the scar resulting from her suicidal attempt was in such a position as to be scarcely discernible under any circumstances and easily covered by the collars of her dresses or by beads or other ornament.

The above cases will serve to indicate the type of therapy employed. It is recognized that the explanations appear to be simplicity itself, for it is difficult, if not impossible, to give a suggestion of the numerous occasions in which emotional and behavior crises in the patients had to be avoided.

The therapy must be fitted to the individual case, and consequently the attempt to assign specific therapies to diagnostic types is subject to considerable error. In general, however, the therapy of reeducation has been successful with hysterias and with certain situational anxieties. Those patients with elaborate psychasthenic syndromes have provided more difficult problems, and the therapy has been more involved and long drawn out. Certain features of reeducative therapy, in combination with other forms of therapy, may also prove valuable in the treatment of some of the major psychoses. Thus, in cases of recurrent manic episodes the understanding may help the patient to recognize the beginning of the attack. Such patients may be taught to arrange their activities so that no new major interests are attempted until those they have been engaged in are well organized and well integrated.

It is not assumed that the treatment of psychotherapeutic devices has been exhaustive, especially when the techniques of free association and the transference have not been discussed. Since these techniques are essential parts of psychoanalysis, they are discussed in the next chapter. In reviewing

the various devices and therapies, it will become more and more evident that the line between supportive and insight therapy is somewhat indistinct. Most therapies provide some support and some insight. In the discussion of psychoanalysis in the next section one will have an opportunity to compare depth therapy with the kinds of therapeutic approaches that have been presented as being primarily supportive in type.

CHAPTER 11

PSYCHOANALYSIS

Psychoanalysis is a highly specialized form of therapy, and complete understanding can be attained only by a thorough study of psychoanalytic theory. Some of the concepts have been partially discussed in Chap. 6. The scope of this book does not permit the full presentation of psychoanalysis as a psychological theory. A brief historical sketch of the setting in which the theory was born and developed will be presented here with some discussion of the principal concepts on which the theory rests. The reader should, however, be fully cognizant of the fact that only a brief summary is being presented and that satisfactory understanding must be based upon other reading such as Freud (1922, 1929, 1933, 1940), Ferenczi and Rank (1925), Fenichel (1945), and Alexander and French (1946). Attention in this chapter will be given primarily to psychoanalysis as a form of therapy. It should be noted that psychoanalysts take the position that the first step toward becoming an analyst is to be analyzed oneself and that, even then, continued guidance and training by a qualified analytic teacher are required for the development of adequate competence. Many of the concepts developed through psychoanalysis should, however, be understood by any therapist whether he practices psychoanalysis or not. The free-association method, resistance, transference, and countertransference should be well understood by everyone who participates in therapy.

The place of psychoanalysis in the history of medical psychology has been noted in the first chapter. It need be recalled here only that psychoanalytic theory and treatment originated when Breuer and Freud observed that repressed experiences play a role in the development of hysterical phenomena. Hypnosis was the method used by both in the treatment of their patients. Under hypnosis the patients were able to talk freely about their forgotten experiences, and consequently the method was referred to as cathartic. Freud observed that the patient not only talked freely but also discharged considerable emotion connected with the memories that were being related. Upon awakening from the hypnosis, the patient was greatly relieved. The disappearance of the symptom was, therefore, believed to be due to the fact that the patient relived, with all the feeling that originally accompanied it, the psychic act which had been suppressed.

In his first years of practice, Freud relied on hypnosis because of his expe-

rience with Charcot and because of the reported success of the Nancy school in using suggestions with and without hypnosis. The cure or catharsis was then effected through abreaction—the hypnotized abreacted or worked off the repressed material by living through it again, giving free vent to the feelings that were originally excluded from consciousness. Freud, however, soon became dissatisfied with the hypnosis, since he found that not all his patients could be hypnotized and that some who were hypnotized could not be put in deep enough sleep to provide for effective catharsis. He also disliked the active purging that was a part of the hypnotic process. The method of psychocatharsis was finally discarded by Freud when he discovered that he could dispense with the hypnosis and get the same results by letting his patients talk freely. This new method he called "free association," and the analysis and interpretation of these associations he called "psychoanalysis."

The associations, however, he discovered were not entirely free since the patient was not able to give expression to some of his feelings because they had been repressed. This repression excluded further elaboration, or at least there was strong resistance to elaboration. Nevertheless, the repressed material (the unconscious) remained dynamic, and the stream of energy worked itself to the surface on a wrong path—the symptom. There is, then, a conversion of psychic energy into a physical symptom. The task then became one of getting beyond the resistances and understanding them. At this point Freud found the repressed material to be of a sexual nature and proposed the sexual etiology of the disorders. Through the free association and overcoming of the resistance, he gained an understanding of the formation of the symptom. The effort that the patient had to put forth to overcome his resistances became then more important than the abreaction. The uncovering of "complexes" received the foremost attention. The method has gone through a series of modifications. In the early period particular situations were singled out for special attention, but at present no attempt is made to select certain situations as being more worthy of analysis than others. The goal remains the same, namely, the filling in of the gaps of memory, the overcoming of resistance, and the dynamic expression of the repressive forces. The task of the analyst is to reveal the various resistances to the patient so that he may overcome them and be able to bring forward the forgotten situations and their interrelations.

Earlier in the development of the therapy, specific complex situations were singled out for special attention, and the patient was encouraged to bring dreams forward for analysis. The analysis of dreams is still considered important, but the tendency is to attend to them when they occur in the process of free association. Thus they are not utilized, as in the past, as special points of attack but are analyzed as they appear. In the same way the symptom complexes are not given a special position but are analyzed as they occur in the free association. Symptoms tend to be interpreted much

less freely, and attention is given to their setting and meaning as they occur. Thus as the method of therapy evolved, attention has been directed away from consideration of specific situations to the study of the total personality.

Freud's early thinking was in terms of traumatic events as causative factors. Present analytic thinking accents the meaning of the event to the patient. The event is therefore not regarded as the cause of the neurosis, but its meaning continues to influence the patient's behavior until it can be retrospectively altered through further life experience. The patient, however, resists the experience for the same reason that the traumatic event made him defensive against further experience in that area. The earlier thinking was, therefore, about catharsis to undo a causative trauma, whereas the current thought is about corrective emotional experience to permit new meaning for past and current events. In other words, the uncovering of the content, or making it conscious, is no longer considered to be by itself curative. What is considered important, at present, is to bring to consciousness the resistances or defensive maneuvers of the character structure rather than to discover sexual trauma.

In the meantime, the transference relationship, with the help of which the resistances are uncovered and dispelled and about which more will be said later, has become the cornerstone of the therapeutic method.

THEORETICAL FOUNDATIONS

While it is impossible here to present a full picture of the theoretical foundations on which the theory of psychoanalysis rests, some attention must be given to the fundamental Freudian concepts before the classical method of psychoanalytic therapy is discussed. Freud's concepts of the unconscious, of repression, and resistance must be understood for an appreciation of the therapeutic procedure; and his position with regard to the sexual etiology of the disorders must also be appreciated in order to understand and appreciate the attention given to the importance of infantile experiences.

Libido and Its Attachments. Freud's first important postulation is that of an innate disposition, impulse, or striving toward a goal. He assumed this force to be centered in the sex urge or instinct. Therefore, all the sexual functions are comprised in the term "libido," which is defined as a quantitatively changeable and not yet measurable energy of the sex instinct that is usually directed to an outside object. He broadened the use of the term "sex instinct" to include all the impulses that center about love. The main component is sexual love and sexual union the main aim, but the concept includes self-love, love of parents and children, friendships, and even attachments to concrete objects or devotion to abstract ideas.

The libido is first localized in erogenous zones other than the genital zone. In other words, the sexual drive does not begin with puberty but with

infancy. Infantile sexuality, then, becomes of great importance in the development of the personality structure. In early life the child gains expression of the sex drive through its own body. In this pregenital period, roughly the first two or three years of life, the libido centers around oral and anal gratification. In the oral phase the mouth is the erogenous zone, while in the anal-sadistic phase, the anus and organs of excretion are the erogenous zones Nursing, excreting, and other stimulations of erogenous zones thus assume importance. Later personality traits such as aggressive and sadistic tendencies may develop from difficulties encountered in this period.

Between the third and sixth years the libidinous striving becomes centered in the genital zone. In the early life the libidinous strivings have been directed toward the self, and the child is said to be in the narcissistic period. Later the child's libido is directed away from the self, and the persons more acceptable for this purpose are the parents. Freud's development of the Oedipus and Electra complexes stems from the belief that the child selects as a definite sexual object the parent of the opposite sex. For example, the baby's libido is at first encouraged by the natural processes involved in rearing the child. Since the child must be weaned and autoerotic habits corrected, a conflict develops with the mother, and the father becomes the boy's ideal. This latter attachment is not, however, a satisfactory one since the father is a rival for the mother. The boy then makes the mother his love object and wishes to take the father's place. The solution may take the form of shattering his attitude toward the father and wishing him dead or removed.

In a similar manner the girl may develop an affectionate dependence on the father and a need to be rid of the mother who is in the way. As the family is increased, hate may develop toward the unwanted new child and resentment toward the mother because her attention to the new child forces the first child into the background. With the development of the family, a variety of substitute changes may take place. Thus a boy may choose his sister as a substitute for his mother, or a girl may take a brother as a substitute for the father. The theory further assumes that in boys the fear of castration closely follows the Oedipus situation. In girls this is paralleled by the envy of the male genitalia but precedes the Oedipus situation.

As the child develops, other specialized tendencies arise. These special tendencies, which are diametrically opposed, Freud called the life instinct and the death instinct. The life instinct concerns race-preservation and includes the uninhibited sexual gratifications and self-preservative impulses. The death or destructive instinct is the tendency to reestablish the condition which was disturbed by the emergence of life. This instinct includes the self-injuring and self-destroying impulses and the regressive tendencies or impulses to reinstate an infantile or earlier level of behavior.

Mental Organization. The development of the personality structure, according to Freud, is to be understood by examining the dynamic relationship

existing between the id, the ego, and the superego. The id is viewed as a source of instinctive energy centering about the sex instinct and is unconscious and amoral. The ego has instinctive tendencies of its own but is influenced by perception and plays the part of a censor to a certain degree. The superego is partly instinctive and partly influenced by prohibitions through teaching. It, in a sense, rules the ego, and its chief function is criticism which creates in the ego a sense of unconscious guilt. Thus the child is born not only with instinctive tendencies toward the gratification of sex but with another set of instinctive tendencies which mediates these strivings.

In the beginning the libido has relatively free expression, as pleasure of a purely sexual nature is derived from natural bodily functions. The ego has as its primary task the adjusting to reality. The ego instincts are, then, the dynamic forces which prevent the id from coming into too direct contact with the environment. It becomes the repressing force of the libido in spite of the fact that it comprises some libidinous tendencies. In the child the ego is poorly developed. It develops gradually, and as the id comes more and more into direct contact with the environment, the ego develops and protects it. Thus the ego plays the role of censor.

In sleep the censor is partly relaxed, but it is never completely off guard. This relationship accounts, in part, for the Freudian interpretation of dreams. The instinctive libidinous tendencies of the id are censored by the ego and denied formulation. They may be formulated, however, in a disguised form. The manifest content of the dream, therefore, represents the distortion of the latent content brought about by the censor function of the ego. The latent content, being unacceptable to the ego, cannot appear in its true form but must be symbolized. Finally, a part of the ego develops a critical and constantly observing attitude of the ego itself, in short a function of self-observation. This part of the ego, which makes the rest of the ego the object of observation, is called the superego. In ordinary terminology it corresponds to the conscience and to systems of moral tenets and ideals of the personality.

The development of the conscience is viewed as a reaction to the Oedipus situation, that is, percepts developed as the result of the necessary repressions become the essential elements of the superego. Even if the child becomes conscious of the attractions toward the parent and succeeds in repressing them, the dynamic urge is still operative. The conflicts between the ego and the superego are then represented by the feelings of moral guilt. The superego is in part an image or images of the parents, who must be pleased or whose punishment must be avoided or accepted. Its content will be that of the mores of the culture, drastically modified as it is transmitted through the parents. It will therefore include their particular inhibitions, distortions, and symptomatic attitudes. Furthermore, since its energy is derived from the id, the superego will also contain very primitive, savage symbols for criticism and punishment.

The id may be considered as being formed by the instinctive life and as containing all the repressed material. It is, however, not identical with the unconscious since a part of the ego and superego is also unconscious. The ego must defend itself against the id and the superego as well as against the influences of the outer world. The force which accomplishes this is called resistance. It may be considered as an unconscious function of the ego and superego and leads to repression as a defense mechanism. Thus the displacements, projections, identifications, and transformations are seen as functions of resistance.

Erotic Organization. The difficulties encountered in development may result in development of anal-erotic or oral-erotic personalities. Thus personality types may be differentiated by the organization of the erotic drives about one or another of the erogenous zones. Actually the analysts describe three main types: the oral, the anal, and the genital, each of which is divided into two groups, the sadistic and erotic, respectively. These types are supposed to result from interruption of the orderly progress of personality evolution which takes place by means of shifts in the zone about which the sexual or erotic drives are organized. Interruptions may be due to prolongation of a phase due to overindulgence, or they may result from traumatic episodes in connection with the next phase so that the individual reverts to, or remains in, the previous more satisfactory state. The result is a fixation of the personality organization at one of the earlier levels. This produces a definite constellation of characteristic attitudes and activities so that the erotic organization can be recognized from the behavior of the individual. Clinically, such fixations are generally seen as resulting from erotic, unpredictable variations in parental attitudes. The variations between love and hate, cruelty and kindness, erotic and punitive behavior are seen as resulting in a superego that is morbid, bribable, seductive, and punitive. The further result is an ego habituated to getting along with such a superego at the expense of its ability to sense reality.

As to the origin of the hate and love components (*i.e.*, the sadistic and erotic subdivisions), one has to consider the psychoanalytic views regarding the process by which an individual may invest an object with interest (libido). It is held that the first outflow of interest is in the nature of distrust. If the object on further contact justifies this attitude, definite aversion is established. If, on the other hand, the object proves to be not inimical or dangerous, the original negative attitude becomes overlaid with a positive one which tends to hide it completely. The more satisfying the object becomes, the more intense is the libidinous charge in which it is invested. If the object now proves inimical or frustrates the potential satisfactions, the erotic investment flows back to its source in the individual and leaves the hatred component carrying the full intensity of the charge.

Psychoanalytic theorists have maintained that the very first important

activity of the child is sucking, which comprises both the function of obtaining nourishment and that of giving pleasure. The pleasure component becomes detached from the nutritive and results in sucking for pleasure. The organization of the pleasure activities under the domination of the mouth gives rise to the oral-erotic character. If things go smoothly, this is gradually superseded by the anal interests toward the end of the first year of life. The transition is accomplished by the weaning process, which may result in frustration and hatred or sadistic attitudes in the oral sphere as the erotic components become organized about the anal zone. Overindulgence in the oral stage leads to fixation of interests in oral activities such as talkativeness and excessive appetite as well as to many more general personality attitudes. In the sexual sphere it leads to oral perversions. If underindulged, the oral fixations may take the form of sadistic speech, and the oral sexuality will show sadistic tendencies. In the normal development the traits come out less emphasized and lead to the utilization of the oral mechanism for food and speech, both to satisfy a need and to give pleasure, and to a progressive and satisfactory development as growth continues.

The next phase of zonal erotic organization is the anal, which comes into prominence toward the end of the first year along with the influence of parental training and concern over the function of elimination. This factor can be used to dominate the environment if the parental attitudes permit and may result in the utilization of the anal functions to give and obtain pleasure (anal erotic) or to cause pain (anal sadistic).

The third phase is organized around the genital organs, and the tremendous advantage of these organs in their anatomical and neurological structure for pleasure giving leads to an organization of the erotic drives about them so that other zonal activities are now used to secure the prospect of genital satisfaction As the genital organization proceeds, interest in objects outside the body of the individual increases as they are potential sources of genital satisfaction. This leads to the formation of the genital character with the external object interest, relatively unambivalent attitudes, and subject to the vicissitude of the Oedipus and castration complexes. Sadistic and erotic tendencies carry over from the pregenital phases as they are more or less completely brought into the genital organization.

The development of the personality is also viewed in relation to the objects toward which the libidinous interests are primarily aimed. The infant is relatively uninterested in external objects and is primarily concerned with his own state of tension or satisfaction. This self-directed attitude is called "narcissism," and personalities that show a persistence of it are called "narcissistic." The activities leading to satisfaction are called autoerotic. The turning of interest toward bodies like one's own (*i.e.*, of the same sex) is called homosexuality, and personalities in whom such tendencies persist are called homosexual

It is to be noted that very complex personalities can be derived by means of combining these different character types. Thus we can conceive of an inhibited character, with oral fixations and heterosexual interests. The inhibited character develops on the basis of an overstrenuous superego in which the id impulses are denied expression. In opposition to this, lack of control of the id impulses may result in impulsive-compulsive behavior usually dominated by the unconscious instinctive drives.

Dreams. Since in psychoanalytic therapy dreams are obtained through the technique of free association, it is necessary to give some attention to the Freudian interpretation of dreams. Dreams are presumed to be important for the uncovering of the patient's unconscious. Freud took the position that it is necessary to distinguish between the manifest content of the dream and the latent content. The content of the dream which is reported by the dreamer is called the "manifest content," and the unconscious processes which give rise to it are called the "latent content." The manifest content is investigated in analytic therapy although it is viewed as being of minor importance. The important content of the dream is the hidden material, namely, the latent content. The function of the dream is thus assumed to be preventive, that is, to prevent disturbance.

Even in dreams the personality seems unable to accept formulations of all strivings and desires, and the dream experiences are therefore distorted. Tendencies that are unacceptable to the ego are distorted or transformed and appear in the dream in symbolic form. The manifest content of the dream is therefore symbolic of the unconscious strivings or latent content. The manifest content is produced from the latent content in much the same way that symptoms (which are manifest) are produced from unconscious or latent factors. The dream is then assumed to represent in more or less distorted form an ungratified wish. This distortion or transformation takes place by what Freud calls "dream work" which includes condensation, displacement, secondary elaboration, and dramatization. The process of condensation makes the dream shorter. This is accomplished by a fusion of two or more thoughts, persons, or events into one. The manifest content in this way becomes an abbreviated edition of the latent content. In dream analysis we may therefore frequently be concerned with words that have a double meaning. Displacement means that the latent element is replaced by something that does not seem to have much to do with it or that the emotional setting or affect is transferred from one idea to another. One item, therefore, which may appear quite important in the manifest content may be insignificant in the latent content, or vice versa. The interpretation of dreams with regard to displacement becomes very significant, since the relationship between the manifest and the latent content may appear very obscure. Secondary elaboration is the method of welding the dream material into a coherent story. By this process the dream material undergoes alteration for the purpose of making a coherent story out of an

apparently disconnected series of events. Dramatization consists of transferring the thoughts of the dream into visual images.

The material of the dream is to be understood as an attempt at wish fulfillment. The wish cannot always appear in its direct form because of conflict, resistance, and repression. Because of the censorship, the thoughts and desires are allowed to enter from the unconscious in a concealed form only, that is, in symbols and pictures. With regard to symbolization, it should be noted that certain objects which appear frequently in the manifest content stand regularly for the same unconscious content or have a constant symbolic value. The dreams may relate to the gratification of any desire but frequently have sexual significance. Some of them express the present state of the person in symbolic form. Others may be concerned with early experiences and attitudes. The dream, then, as reported, is seen as a vague caricature of the latent content, and the analysis must discover by free association the meaning of the dream. It should be noted that the patient must develop an understanding of the dream material from his free associations. The analyst may offer interpretations, but the patient must determine whether or not the interpretations are correct. Current psychoanalytic therapy still gives consideration to the hidden id meaning of the dream but tends to give far greater attention, in the interpretation of the dream, to the precise methods used or neglected by the ego. This is particularly true if the methods are found to be those which were overworked or neglected in everyday life but assume great significance in the analytic transference. There appears also a tendency to give less attention to what is dreamed and more attention to when it was dreamed, in what life situation, and in place of what reality thinking.

The understanding and interpretation of the dreams may be seen as similar to the development of understanding of the symptoms of the neurotic patient. Instinctive desires and ideas related to such desires may be in conflict with other attitudes and may consequently be rejected or kept out of consciousness. The unconscious drive may be transferred into the symptom. The neurotic symptoms are symbols like the symbols of the dream. Freud also explained how the same mechanism might be active in ordinary living. Simple acts like forgetting, losing things, slips of the tongue, etc., may be symptomatic acts and consequently may need to be analyzed. We may forget names and experiences in order to prevent certain disagreeable things from being consciously formulated. In other words, some of these so-called simple mistakes have a meaning.

The Unconscious. In order to appreciate the importance of the free-association method of psychoanalysis, it is necessary to understand the concept of the unconscious. The unconscious consists of the forces and drives which are not able to gain conscious formulation. The material of the unconscious has once been conscious, but since it was not acceptable to the personality, it has been repressed. This is another means of expressing the way in which

the ego and the superego operate in relation to the id. The normal person is able to direct, shift, or inhibit the striving which is unacceptable to the ego or superego into a mode of action that is acceptable. The neurotic person is unable to accomplish such a redirection of the striving, and consequently he represses. The repressed strivings are relegated to the unconscious, but they still maintain a great amount of energy and constantly attempt to force their way into consciousness. This they are unable to do in direct form, but they may appear in consciousness in disguise. These disguises of thwarted strivings may be in the form of dreams and the various symptoms of the functional disorders. The transformation may take a variety of forms. Thus the emotions which are linked to the unconscious forces may become attached to quite unrelated desires and activities (displacement). They may, on the other hand, change their direction or be modified in type and appear as symptoms. The working of the unconscious is extremely difficult to comprehend. The absence of associative links or of a concept of time and space, along with symbolic language and the ease with which the unconscious deals with displacement, condensation, projection, etc., all make for extreme difficulty in the development of understanding.

Transference Theory. The transference situation constitutes the core of the analysis. It is, therefore, necessary to have some understanding of the theory underlying the transference situation before examining the development of the therapeutic procedure.

An intensive emotional relationship of the patient to the analyst frequently develops in the course of the analysis. This relationship was called by Freud the transference or the reenactment of the child-parent relationship. The patient projects upon the analyst the emotions that he has experienced with other people in the course of his life. Thus the emotions that have been connected with others discussed in the analytic situation may be directed to the analyst. The situation referred to is actually a reenactment of emotional relationships with those people who have been important in early life. It is not, therefore, specifically a child-parent relationship but may include relationships with a large number of people. However, the most important of these relationships are usually with the parents. The transference phase of the therapy may best be understood as a shifting of the ground of the patient's conflict to the analytic situation itself. The patient has become preoccupied with the life in the analyst's office, and his attention is directed to his relationship to the analyst.

The analyst, in a sense, represents to the patient various people who have been important in his life, especially during his childhood. Not only is the analyst the object of discussion, but considerable emotion is discharged on his person. Primarily the emotion discharged is one of affection and dependence. This Freud called the positive transference. In many instances, however, a hostile attitude may be dominant, and this is referred to as the

negative transference. The identifications appearing in the transference, along with the emotional change, may give important clues on the development of the patient's ego ideal. The transference situation develops gradually and offers the opportunity for the conflict between the patient and the analyst to be substituted for the patient's inner conflict. Finally the transference may be said to have developed into the transference neurosis when the whole infantile experience with all its attitudes and taboos is repeated The relationship of the transference to resistance is considered to be particularly important. The strong affective relationship of the patient toward the analyst is assumed to be helpful in enabling the patient to overcome his resistance. In the same way, since he feels protected, he has the courage to seek and find the repressed material. It should also be noted that the transference is not used immediately for therapy but is itself analyzed. In other words, the true nature is demonstrated to the patient.

Two other factors must be kept in mind with regard to the transference situation. The analysis cannot be brought to a satisfactory conclusion until the transference has been dissolved. More attention will be given to this point later. It must also be recognized that some transference may flow in the opposite direction, that is, from analyst to patient. This is called countertransference. The analyst must, therefore, watch constantly his own attitude toward the patient and investigate the unconscious factors of his countertransference The failure to analyze the countertransference may have serious effects on the development of a satisfactory treatment. The actual management of the transference situation will be considered later. It is sufficient here to recognize that care must be exercised with regard to interpretation until a sufficiently reliable transference has been established. In examining the theoretical structure of psychoanalysis, the student should consult the searching objective study of psychoanalytic concepts made by Sears (1942).

PSYCHOANALYTIC THERAPY

The psychoanalytic therapy is aimed primarily at getting a deep understanding and satisfactory resolution of the pathological mental processes. The goal is to relieve the patient of the bad consequences of his conflicts and to free the energies that have been bound in the subconscious. This is accomplished by making the patient face and understand what he has previously avoided. He learns to understand his desires (the understanding of the id), what the attitude of the personality is to them (the understanding of superego), and the desirability of modification of the attitude (the understanding of the ego). The beginning procedure for disclosing the content of the unconscious and leading to adjustment to reality is that of free association.

Beginning Stage. The technique of the classical psychoanalytic therapy begins with the selection of the patient. The treatment has been used for

practically all types of mental illness, but the transference neuroses offer the best possibilities. At the outset the therapist gives the patient some understanding of the general method of procedure and of the purpose and aims of the therapy. One or more interviews may be used to develop this general understanding. The patient is advised not to expect recovery in a definite period of time, and guesses at the duration of the treatment are avoided. It is important that the financial question be settled before treatment begins. Psychoanalysts advise against free treatment not only because the method is very time-consuming but because the financial responsibility is viewed as a therapeutic stimulant for the patient. The patient is acquainted with the fact that some of his behavior and attitudes may be dependent upon emotional factors of which he is unaware and that the task of the analyst is to trace back these associations to the unconscious motivations. As these unconscious strivings are elevated to the conscious plane and interpreted and understood, they may be assimilated into the personality and lose their potency for disturbing his integrated activity. This must be accomplished without the therapist's revealing too much his own theory concerning the nature of unconscious material.

The patient must understand that the analysis is to depend primarily upon free association. If he learns to say whatever comes to his mind, no matter how irrelevant it may seem or how objectionable it may be, the chances of success are greater. Since this is an unnatural process, many patients find it difficult to begin the free associations. The fact that the analyst has gone through this process himself is extremely helpful to him in getting the patient started in the therapeutic situation. The analytic period is usually one hour a day, and complete analysis requires many months or even years. Some modifications are made in the time procedure, but analysis is rarely attempted in less than three one-hour periods a week. In the classical analytic procedure the patient reclines on a couch and is made as comfortable as possible. The analyst usually sits behind him and out of direct line of vision. Modifications and changes in this procedure may be utilized to fit the individual situation, but the method described is the preferred one. This beginning phase of the treatment continues until the patient develops a reliable enough transference to enable the analyst to proceed safely with interpretations.

Resistance and Interpretation. As the patient proceeds with his free associations, there will be many indications that he is unable to bring forward important material. A great part of the analyst's task throughout the treatment will be dealing with resistance. Whenever an arrest of free associations of ideas or flow of talk occurs, it is possible that resistance is in operation. Resistance may also be indicated when the patient has too easy associations. In other words, resistance may occur not only when the patient is unable to continue talking but also when he continues to talk in order to prevent important but unpalatable associations from being consciously formulated.

The successful management of the resistances is complicated by the variety of ways in which the resistances may be manifest. The patient's inability to live up to the rules of the free association, his negativistic attitude, his silence or dearth of associations, his slips of the tongue, the appearance of new symptoms as well as the return to old ones are all indications of the resistance. All the mechanisms of ego protection, such as compensations, projections, distortions, displacement, loss of memory, rationalization, etc., may be utilized to prevent conscious formulation of instinctual drives. In addition, both positive and negative transference and even the analyst's own countertransference may be used to set up resistances. The task of the analyst is rendered even more difficult by the fact that the most successful resistances are unobtrusive and therefore may go unnoticed.

Since the resistance is an attempt at self-protection, it cannot be overcome by direct attack but must be undermined. Every effort is made to allow the patient to continue with his free associations without any attempt to make a coherent story or to determine whether or not the associations are worth while. As he ranges over present and past without attempting to find connections, certain relationships may spontaneously become clear. Usually, however, the relationship will be noted by the analyst. Interpretations made at this point are viewed as being tentative, and correctness or degree of correctness of them may be understood only after more free association. In the orderly development of the analysis, then, solutions which seem clear at one time may later be greatly modified or completely rejected. The analyst must be careful to subject the patient to as little force as possible and to refrain from interjecting his own anticipations. It may appear that, in such a passive situation, there would be little likelihood that the patient's free associations would lead him to the unconscious repressed material. The analytic situation itself, however, exerts considerable influence on the patient's associations. In understanding the content of the free associations, it is important to note that the repressed material will not appear directly but rather as something which approximates it. The strength of the resistance may be approximated by the remoteness of the substitute association. Regarding the importance of the uncovering of the resistance Freud (1935, p. 77) commented as follows:

> Uncovering the resistance, however, is the first step towards overcoming it. Thus the work of analysis involves an art of interpretation, the successful handling of which may require tact and practice but which is not hard to acquire. But it is not only in the saving of labor that the method free association has an advantage over the earlier method. It exposes the patient to the least possible amount of compulsion; it never allows of contact being lost with the actual, current situation; it guarantees to a great extent that no factor in the structure of the neurosis will be overlooked and that nothing will be introduced to it by the ex-

pectations of the analyst. It is left to the patient in all essentials to determine the course of the analysis and the arrangement of the material; any systematic handling of particular symptoms or complexes thus becomes impossible. In complete contrast to what happened with hypnotism and with the urging method, interrelated material makes the appearance at different times and at different points in the treatment.

It should be recognized, however, that it is necessary not only that the patient's resistance be uncovered but that various interrelations be recognized. By continuous free association the patient goes more deeply into his unknown resistances and overcomes them. This situation cannot be forced. Although the analyst must refrain from offering profound solutions to the patient, some interpretations may be offered to ease the flow of the free associations. These are not extended to provide solutions but rather to clear the path of the associations and to provide new ways for the development of understanding. Interpretations that are too deep or offered too early may increase the patient's resistance or may even offer him sufficient temporary relief to cause him to stop the analysis In this connection it is important to note that the desire to get well, which comes from suffering, is the main therapeutic force, at least until a strong transference has been developed. The analyst is in a position to offer interpretations both because of his great experience and because he occupies the position of the detached onlooker. In addition, he has some understanding of the unintelligible language of symbols, some of which have individual meanings and some of which have universal significance.

Dream Interpretation. At some time in the course of the analysis, dream material will be presented to the analyst, and an analysis of the dreams must be attempted. In the classical psychoanalytic situation, the patient is not advised to report his dreams as had formerly been the practice. The dreams are, however, considered whenever they make their appearance in the course of the free associations. It is not always possible to reach a real understanding of each element of the dream, but every effort is made to analyze it as completely as possible. The dream content, when properly understood, enables the patient to go beyond his resistances and to become aware of important underlying dynamic factors. The uncovering of the deep meaning or manifest content of the dream is therefore an important part of the analysis. Both insufficiency and overproduction of dreams may be related to resistance. In the former instance the analyst may have to bring this fact to the attention of the patient, and in the latter instance it may be necessary to refrain from the analysis of some of the dreams, since they are obviously being used as resistances.

Transference. The analysis moves gradually from the early phase into the transference situation. Some transference is usually present from the beginning, and throughout the analysis floating positive and negative trans-

ferences are expressed. The awareness of this fact by the analyst may prevent many of the early possible crises of the analysis. Gradually the ground of the patient's conflict shifts to the analytic situation itself The free associations begin to show more and more material that deals with the present, and the patient becomes preoccupied with his relations to the analyst. When the patient now concerns himself with the situation of the moment, the analyst may point out that this is resistance and probably has to do with the person of the analyst. The patient should, however, not be urged into the transference situation, for this would rob the situation of the essential character of spontaneity. The patient now begins to expect and shows a readiness for more interpretations. These should not be given because the patient wants them, but only if they explain unconscious factors. The primary object of the therapy is to make the unconscious sets of attitudes conscious. While the interpretations at times are aimed at overcoming immediate objects, the more important objective of the interpretations is to lead the patient back to the unconscious roots of the transference fantasy. The transference manifestations will constantly bring to the fore the struggle between the intellect and the forces of instinct. The task of the analyst is to make it possible for the patient to fit his strivings into their proper place in the treatment and in his life history.

In the transference the analyst becomes the figure under discussion, and the patient projects his emotions and libidinous strivings onto the analyst. The analyst will, therefore, represent at various times different people who have been important in the patient's life. These identifications, especially those of early childhood, will throw light on the nature and development of the ego ideal. Various identifications will be made. As each identification is analyzed, an earlier one takes its place going further backward in the personality development. During the transference both fantasies and real experiences will be reenacted and emotions of love, hate, fear, anxiety, and resentment will be projected on the analyst. The meeting of this transference of emotions requires great adroitness on the part of the analyst. In the words of Freud (1924, p. 385), the analyst

> must guard against ignoring the transference-love, scaring it away or making the patient disgusted with it, and just as resolutely must he withhold any response to it. He must face the transference-love boldly, but treat it like something unreal, as a condition which must be gone through during the treatment and traced back to its unconscious origins, so that it shall assist in bringing to light all that is most hidden in the development of the patient's erotic life, and help her to learn to control it.

It is the task of the analyst to reveal adroitly that this is not a genuine love by directing attention to the fact that it contains no new features connecting it with the present situation but is composed entirely of repetitions of earlier

reactions, particularly childish ones. The patient is led also to see the presence of the unmistakable element of resistance.

The detailed analysis of the patient's behavior in love will help to make clear to him the affect that is directed toward the analyst. In turn the patient's understanding of his feelings toward the analyst will make it possible to understand his original infantile reactions and repressions. The core of the analytic situation may then be seen to depend upon an understanding of the role of transference and its relation to resistance. The resistance is expressed in the intensity and extent of the transference. The success of the analysis depends in a great measure upon the passive direction of the patient through the transference to the understanding of his resistances.

The interpretations that are offered must, however, be carefully presented. If they are offered too soon, they tend to increase the patient's resistance. If they are dogmatically presented, the patient may be unable to use them for the uncovering of resistance and the development of understanding. If symbols are too readily given universal significance, the analyst may create serious misunderstandings. The interpretations must, therefore, be carefully presented so as to help overcome the resistance, further the production of more unconscious material, and thus enable the patient to understand his repressions and deal with them. It is not possible to write a rule for the presenting of interpretations. They will vary according to the progress of the analysis and the patient's development of the underlying dynamics of his strivings and resistances. In general, the earliest interpretations will have to do with motivations that are close to the surface. Only when the patient has made progress is it possible to present deeper interpretations that stir up the whole personality. Throughout, the patient must take a critical attitude to the interpretation, and the analyst must make the patient realize that the interpretations are offered as possibilities and that the patient must sift them out, criticize them, and subject them to searching examination. Interpretations considered to be correct at one time may be found to have a different meaning when more material has been uncovered. In other instances, interpretations first rejected will be accepted by the patient when he has overcome resistances and is able to understand meanings that were formerly hidden.

It is important to recognize that the transference, which is the heart of the psychoanalytic method, is not an entirely one-sided affair. The analyst needs to be constantly on guard for indications of countertransference. He must scrutinize his own attitude toward the patient and understand the meaning of it. The proper appreciation of the countertransference depends upon the analyst's understanding of his own complexes and resistances. Before beginning analytic therapy he needs, therefore, to have been well analyzed himself and must later continue to deepen his understanding of himself as he makes observations on his patients. In the course of the analysis, the analyst will be stirred up himself, and since success depends upon the

handling of the tranference situation and development of interpretations, the analyst must be able to appreciate the reasons for his own attitudes, or great mistakes will be made. He must constantly guard against being influenced too much by his own aggressions and anxieties. His own desire for mastery may cause him to talk too much and may result in an eagerness to present explanations and interpretations. On the other hand, his own attitudes may cause him to be silent when the situation calls for some participation. He must be able to recognize whenever countertransference or resistance develops and be prepared to meet the situation. The patient will direct his affect toward the person of the analyst and will sometimes describe him pleasantly and sometimes unpleasantly. In these situations the analyst must not be either hypersensitive or immune but must be prepared to guide the patient to an understanding of these attitudes. In attempting to understand and deal with the patient's resistances, the analyst must be guided by the individual case and the occasion. He may therefore try encouragement, interpretation, or silence as the situation demands. In much the same way he must continually investigate his own reaction to the patient. His own silences, interventions, or stereotyped behavior must be justified in terms of good therapy and must not be indicative of his own resistances and anxieties.

Terminal Stage. The analysis cannot be considered complete until the transference situation has been resolved. The terminal phase of the treatment, therefore, consists in the breaking of the transference and the establishing of a normal doctor-patient relationship. As the transference is dissolved, the patient may begin to show concern over the danger of separation and may react with new symptoms, fantasies, and resistances that must be worked through. After a long analysis, it is believed that the terminal phase may last from three months to a year. The patient's readiness for the termination of the analysis must be viewed with considerable care and does not depend only on the disappearance of symptoms. Symptoms may disappear early in the analysis or may persist even after successful treatment. The progress of the analysis is determined primarily by the degree of successful analysis of the instinctual urges and of the ego. The infantile sexual theories must have been exhaustively investigated. In considering the patient's readiness for the termination of the analysis, Glover (1940, p. 96) makes the following statement:

> The patient must have made the regressive identification already referred to of an analyst with superego; he must have worked it through and he must, abating his demands on analytic protection, be ready to permit a modified superego to function in his own mind. When the analyst feels that these conditions have been satisfactorily approximated to, he may, judging the tempo of the patient's mental adaptation, indicate that the time is approaching for the termination of the analysis.

The approach to this situation may be signaled by a number of conditions. The clearing up of childhood memories that have been used as resistances for important libidinous drives and the gradual indication that all the points relating to the infantile sexual theory have been satisfactorily worked through will serve as indicators of the approach to the terminal phase. The lack of new material and the evidence in the reported dreams of an altered attitude toward life, as well as marked changes in the patient's social relations, will also serve to indicate the patient's readiness to terminate the analysis. Plans for the future begin to appear with greater frequency, and the dependence on the analyst is gradually lessened.

Indications and Contraindications for Treatment. The selection of the patients who may be expected to benefit from psychoanalytic therapy is of great importance, since the treatment is long and expensive. Complete agreement with regard to this question is not to be expected, but the position taken by Fenichel (1945) is a good example of the position of many classical psychoanalysts. Such a position may be understood by reference to a short statement of the indications and contraindications for psychoanalytic therapy as presented by Dorcus and Shaffer (1950, pp. 567–568).

> All types of illness do not lend themselves with equal facility to treatment by psychoanalysis, and there are a number of contraindications for analytic therapy. Since analysis consists of making the ego face the conflicts, low intelligence is a contraindication. It is generally agreed that the patient must be intelligent and have a certain amount of education and ethical development if favorable results are to be anticipated. In addition, the patient must not be too old, since near and above the fifties it becomes impossible to inspect the mass of psychical material, and the time required for recovery is too long. The ideal age is generally placed at some place between fifteen and forty since psychoanalysis presupposes both a certain reasonableness and a certain flexibility of the personality. The young are presumed to be lacking in reasonableness, and the old persons may have lost the flexibility. The patient must be cooperative, anxious to get well, and consequently willing to attempt the treatment.
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> The triviality of the neurosis, the urgency of the neurotic symptom and certain unfavorable life situations have also been mentioned as contraindications. Thus, the time, money and energy necessary for the analysis may make certain trivial neuroses not worth the effort. In other instances, certain neurotic symptoms require immediate removal which is impossible in the analytic situation. In such instances it is possible that other therapeutic measures may be used until the immediate emergency is over and psychoanalysis is possible. In still other cases, it is possible that the unfavorable life situations, in which the patient must continue

to live, may give one the impression that a successful analysis may make the person more unhappy than he is in his neurosis.

The patient who is given to excessive introversion may run the risk of being taught the habit of turning inward more and more. He focuses his attention entirely on his own feelings and revives many painful memories which might be better left untouched. Some schizoid personalities give the impression that they might become psychotic if childhood conflicts are stirred up, and consequently the analysis for such personalities may be dangerous.

Since the interpretation of the transference is the main tool of psychoanalysis, the transference neuroses offer the best possibility for analytic therapy. Psychoanalysis makes the assumption that in the neuroses the warded-off impulses are striving for an expression in connection with longing for objects and they, therefore, produced transferences. The psychotics, on the other hand, are assumed to have regressed to a phase before the establishment of objects and consequently have lost interest in contact with others and tend to withdraw. Successful analysis with the latter group would therefore require some reestablishment of at least a minimum of transference ability, and even then a modification of the technique is necessary.

In general, the hysterias, and particularly early cases of anxiety hysteria, may be said to have the best outlook. Compulsion neuroses and pregenital conversion neuroses, while somewhat more doubtful than hysterias, are considered by many analysts to be good risks for analytic therapy. This is believed to be particularly true of those cases in which the rigidity has been broken down and in which the anxiety and pathological conflicts have come to life again.

Neurotic depressions that are not too deep and that present a neurosis still aimed at objects may respond reasonably well. Character neuroses are generally agreed to be more difficult to approach than are symptom neuroses, but many analysts believe that character neuroses in which the depth of regression is not too great may be satisfactorily handled by analysis. In such cases where the personality is rigid and there appears to be an inability to cooperate, the results have been unsatisfactory. Similarly, perversions, addictions and impulse neuroses have not responded well to analysis. Psychotics, in general, have been the least favorable group for analytic therapy.

OTHER ANALYTIC THERAPIES

Up to this point an effort has been made to describe the essential features of classical psychoanalytic therapy. Not all analytic therapies will proceed in this fashion. A great variety of analytic therapies differing more or less from

each other could be presented. Some of these differences such as those of Adler, Jung, and Rank depend upon actual differences with Freud on fundamental psychological theory. In such instances Freud has insisted that the methods used are not those of psychoanalysis. He has insisted that only those therapists who have accepted his concept of the unconscious and his ideas of resistance and repression, along with his evaluation of sexuality and the Oedipus complex, have the right to refer to themselves as psychoanalysts In other instances the therapies represent the ways in which Freud's technique may be modified according to the exigencies of the situations or the individuality of the problems. No effort will be made here to present all the existing modifications. Some attention will be given, however, to the positions of a number of therapists whose technique differs somewhat from that of the classical Freudian procedure. Since they are analytic therapies, they will be presented here despite the fact that according to Freud some of them may not be called psychoanalysis.

Adler. The individual psychology of Alfred Adler (1927), one of Freud's most celebrated pupils, is a good example of an analytic therapy which develops around a difference of opinion in theory. Adler accepted most of Freud's opinions but differed with him in regard to the importance of the libido theory. He insisted that there were other fundamental facts, and one in particular that was outstanding in dynamic importance in the development of individual personality. This fundamental fact or feeling was that of inferiority. He further pointed out that the individual attempts to overcome this feeling of inferiority by a fundamental urge toward dominance or superiority. In place of Freud's libido theory, he therefore emphasized the striving for self-assertion and superiority. He pointed out that the feelings of inferiority might center in an actual "organic inferiority" and that psychical compensations occur for these organic deficiencies just as in organic functioning, compensation takes place. When the strivings for superiority are thwarted, the individual becomes self-critical and develops a feeling of inferiority. This reaction results both from self-criticism and the estimates of others. Thus the environmental influences are viewed as important in determining the directional trends of the superiority drive. Adler stressed the importance of early childhood, pointing to his belief that the goal is set in the first five years of life. In this connection he called attention to the child's awareness of his own helplessness and his dependence on others. What the child expects in life is believed to be determined primarily by the early family influences. The various relationships that develop out of being the only child, the oldest child, the youngest child are given particular attention. The parental relationships and various social and economic conditions are analyzed carefully in regard to their importance in personality development.

While Adler does not give the libido the prominent place assigned to it by Freud, sexual factors are nevertheless given considerable attention. They are

viewed, however, in relation to superiority or will to power. Thus Adler differs from Freud and sees masculinity in girls, not as envy of the male genitalia, but of the power that is given to men. In the same way homosexuality might be seen as resulting from a refusal to accept the feminine role since the power resides in the male. The Oedipus situation is also viewed as being related to the desire for power and superiority. The father is head of the family and the possessor of power. The son is subordinate to the father and would depose him and possess the mother. Thus the child is viewed as not seeking the mother in a sexual way but rather the power which the father possesses.

In the Adlerian theory the neuroses are based on feelings of inferiority that develop from inner insecurity, egocentric orientation, and exaggerated ambitions that cannot be realized. An attempt is made to save self-esteem by self-deception. The awareness of the inferiority may be responsible for the development of many talents but may also result in the development of unhealthy overcompensations. The overambitious or discouraged person may deceive himself, become sick, and thus relieve himself from the obligation of accomplishment.

The analysis is used to bring all the factors into awareness and thus to gain an understanding of the reaction and allow the patient to develop an understanding of the underlying dynamics of his behavior. Adler advised against the use of authority and stressed the need for a companionlike situation and the avoidance of the offer of solutions by concrete advice. Nevertheless, reeducation is given a prominent place in the treatment program, particularly in the later stages. As the companionlike relationship is developed, the patient is led to try himself out in practical life situations. The difficulties that arise in these situations are analyzed so that tendencies toward self-deception are recognized. Dream analysis is used with particular attention being given to the relation of the dream material to actual life situations Gradually there is developed an understanding of the will to power and the methods of dealing with it.

Jung. The system of psychology developed by Jung (1931) and called "analytical psychology" is dependent primarily upon Jung's personality types but is in many ways a synthesis of the positions of Freud and Adler. Freud postulated primarily one urge, whereas Jung postulated several arising from one great storehouse. For him, the libido is the source of all energy and not strictly sexual energy. Jung also extended the concept of the unconscious to include, in addition to the repressed material (the personal unconscious), the residue of animal ancestry. The inheritance of racial and social habits was designated by Jung the "collective unconscious." In an effort to reconcile Freud's libido with the concept of Adler, Jung took the position that the course of the libido was complicated by the inheritance of temperamental types which modified the libido and other impulsive tendencies. The two

major temperamental types postulated by Jung were the introvert and the extrovert. The introverts were described as those individuals who, motivated by "will to power" and "feeling of inferiority," directed the libido inward toward themselves. The fixation of the libido on external love objects was seen as a movement away from the self and gave rise to the personality type called extrovert.

In treatment, Jung stressed the need for a transformation of the whole personality leading to self-education. The personality was seen by him as representing a compromise between the individual and society. He therefore believed that analysis should lead to an understanding of the self through a liberation of the influence of the unconscious, enabling the individual to throw off the mask which the personality had constructed as a concession to the outer world. In this therapy, however, he followed in part the methods of both Freud and Adler. He depended somewhat upon catharsis and the attempt to release repressed affects and upon transference for the enlightenment of the patient concerning unconscious fixation. In the utilization of these concepts, he followed Freud but was more active in explanation and interpretation. Dreams were considered by him to be important in so far as they were directed toward solving problems of the future. He viewed them as unconscious energy manifestations of the patient's attempt to solve the problem in the future, in contrast with the Freudian view that the dreams represented the urge of the libido to bring into expression the reaction to a situation in the past. He was also influenced by Adler and gave attention to the will to power and the need for reeducation. He, however, saw the therapeutic situation as one in which both the patient and the therapist undergo change. He considered the transformation of the therapist as being a significant factor in the recovery of the patient and called attention to the necessity of the therapist to continue to analyze himself during the treatment of every patient. Jung also differed with the classical analysts, who believed that a thorough analysis was always necessary, and took the position that frequently a brief analysis was sufficient.

Rank. Rank (1929), who was in his early days an orthodox follower of Freud, later differed with his teacher both with regard to theory and therapy. He came to believe that the birth shock was of great importance and that the individual's characteristics were modified by the physiological and psychic shock of birth. He developed the theory that the individual reacts to life situations, especially those involving separation of any kind, in terms of the reaction to the original birth situation. The individual was seen, then, as attempting to regain the prenatal bliss, security, and protection which were experienced in the uterine situation. The attachment to the mother after birth was viewed as affording a partial sense of security which is later broken down through weaning, habit training, etc. The interplay of each individual's unique set of life experiences with his reactions to the birth trauma molds

his characteristics, and gradually he develops the power and volition to determine in part his own fate. External forces of authority and morality are incorporated into his own personality and are thus added to his basic instinctive forces.

Volition or will was for Rank the most vital force, and it is around his concept of the will that his greatest difference with Freud develops. He described three phases of the development of the will. In the first phase there is incorporation into the self of forces such as sex drives, assertive impulses, and moral codes. In this period the individual recognizes that he is different, but his sense of security is aided by a feeling of belongingness or similarity to the group. In the second phase the will is manifest as counterwill. Antagonism develops between the will and counterwill as the outside forces are not incorporated. If the conflict is resolved in favor of the will, integration and good development take place; otherwise the result is disintegration The individual develops guilt feelings and attempts to rationalize and deny his will. In the third phase he develops "conscience," and the uniqueness of his personality structure becomes evident. The Oedipus or Electra complex is viewed as developing when the counterwill is expressed against the moral code as represented by the parents. The guilt is not dependent upon the prohibited incest relationship but rather upon the expression of the counterwill. Repression, regression, identification, etc., are to be understood with regard to the will. Thus the recognition of willfulness affords individuality which emphasizes feelings of inferiority and insecurity. Security may be attained through repression. In the same way, since willing and assertiveness are painful, the individual may avoid the pain by thinking of the past and regressing to a situation of greater security. Identification is seen as gaining security by attaching the will to others.

The analysis of the will to power consequently becomes for Rank the central feature of the therapeutic situation. The analytic situation is viewed as a duel of the will in which the analyst plays the role of counterwill. His task is not to break the patient's will but rather to help him to develop the possibilities for strengthening the will. The goal of the analysis is to transform the negative expression of will into a positive and creative will. This does not imply the changing of the personality but the development of understanding that enables the individual to accept himself as he is. Rank proposed the actual fixing of a date for the termination of the treatment in an effort to provoke expressions of will which appear in the analysis as forms of resistance. In this way the ambivalent attitude of the patient who desires at the same time the end and the continuation of the treatment is recognized as a struggle within himself because of the conflict of will. Transference and resistance are also viewed in relation to will. The symbols of father and mother represent the principles of force and love, and the guilt feelings develop in the struggle against the will of these two. The individual is led to recognize the develop-

ment of guilt as a result of the effort to enforce one's own will and finally as the reaction to the wish to give one's self through love.

Ferenczi. Ferenczi (1926) developed an analytic therapy based on Freud's general principles, but he proposed that the therapist take a much more active role in the therapeutic situation. The patient is urged to carry out definite tasks in his daily life, such as modifications in the relationship to his family and changes in his personal habits. This is not completely counter to Freud's method. It is true that Freud indicated that the analysis should be carried out in a state of abstinence because he believed prevention to be a therapeutic force. However, this did not refer to sexual abstinence but rather was an attempt to deprive the patient of the substitutive action which provided neurotic satisfaction. He did at times urge some of his patients to expose themselves to critical situations related to anxiety. This he believed resulted in the stirring up and bringing forward of repressed material.

Ferenczi recommended that the therapist interfere with the flow of associations and direct them back to other topics whenever it was felt that the patient was unconsciously avoiding his problems. He believed also that habitual daydreams should be interrupted in the same way. His therapy is also considerably more active with regard to the patient's production of fantasy. In this area he proposed for the patient the subjects for fantasy. Thus the patient is directed toward masturbation fantasies, fantasies of infantile memories, as well as fantasies related to the positive and negative transference. The fantasies thus produced become the topics for discussion and analysis. It should be noted here that most psychoanalysts do not believe that the therapist should participate so actively, at least not in the early stages of the analysis. The position most frequently taken is that passive therapy should be utilized primarily with as little interpretation as possible. This position is held to for a number of reasons. One is that the early interpretations may not give the patient time in the transference neurosis to work through repetitive scenes. Thus the patient's material may be interpreted on lines which are not fundamental. It is usually suggested that active interference wait at least until the analyst has examined his counterresistance.

Recent Developments. Recently a number of analysts have proposed changes in the theory and practice of psychoanalysis. It is not possible to present all the variety of modifications here, but some attention will be given to the position of Karen Horney (1939), who has stressed the fact that the full potentialities of psychoanalysis cannot be realized without disavowal of some past heritage. Horney has taken the position that behavior cannot be explained entirely as a result of instinctual drives such as the Freudian libido. She insists that a broader concept of the neurosis is made possible by a consideration of the individual's strivings for security and the conditions of life which shape the personality. Those factors which make the child feel rejected, insecure, and afraid are given a more prominent place in the devel-

opment of the neurosis than is the Oedipus complex "Narcissistic, masochistic, perfectionistic trends seen in this light are not derivatives of instinctual forces, but represent primarily an individual's attempt to find paths through a wilderness of unknown dangers."

Horney's most important difference with Freud, then, is in the emphasis which she places upon the development of the character structure as the nucleus of the neurosis. Therapy is not designed to enable the patient to gain mastery over his instincts, but rather to help him to reduce his anxiety. Attention is therefore given to the present situation, since Horney contends that it is not possible to arrive at a satisfactory understanding of the patient's personality organization without first having a satisfactory understanding of the situation in which the patient finds himself. In addition, she considers it erroneous to try to arrive at a direct understanding of the symptom picture without having a grasp of the particular character structure. Horney has further criticized the tendency to relate a patient's present peculiarities to specific childhood experiences and to establish definite causal connection. For her, the main effort is directed at discovering what the basic anxiety forces are and what methods are developed for coping with them in actual life situations. The importance of ascertaining neurotic trends is recognized, but this must be followed by an effort to discover the purpose served by the neurotic symptoms. After recognizing the neurotic trends, Freud would have investigated their origin, whereas Horney would investigate their more immediate functions and consequences.

In this way Horney believes anxiety is lessened and improved relations are developed. The childhood experiences are not neglected, but the emphasis is placed on the study of the character structure. The therapist is much more active than is usual in psychoanalytic treatment, and the patient is urged to arrive at decisions when they seem indicated. In some cases a complete and systematic analysis is believed to be unnecessary, and treatment consists only in a direct study of the actual problems.

In the last several years many far-reaching changes have been proposed for psychoanalytic therapy. A particularly good account of the attempts to develop flexibility in analytic treatment will be found in Alexander and French's (1946) *Psychoanalytic therapy*. They believe that the therapist must adapt his technique to the needs of the patient and have, consequently, experimented with such variables as the frequency of the interview, the use of the chair or couch, interruptions in the treatment program, the control and manipulation of the transference, and the combination of psychotherapy with drug or other treatment. A patient is not accepted for a specific method of treatment; and even after the original diagnostic appraisal, it is not certain that the method of treatment used in the beginning will be continued throughout the therapeutic course.

Alexander points out that the standard procedure of daily interviews may

make the patient more dependent than is desirable. He believes that in many cases the same beneficial results may be achieved with fewer interviews. The neurotic's tendency toward evasion is favored by the expectation of an almost infinite number of interviews. Initial improvement in many severe neurotics is described as being due in a large measure to the soothing effect of the procrastination that is fostered by the psychoanalytic technique. The patient is relieved by evading the pressing problems of his life as he regresses to a more comfortable infantile situation. Alexander takes the position that the therapist should attempt to check the regressive tendency and allow no more procrastination and regression than is necessary to calm panic and anxiety. Attention is called to the fact that in many instances unplanned interruptions in the frequency of the interviews have had a vitalizing effect upon the treatment. An important question, therefore, is how to make use intentionally of such incidents, that is, how to manipulate the frequency of the interview so as to get the desired level of emotional participation in the patient. The frequency of the interview must be regarded as a relative affair, and both advantages and disadvantages may result from shifts in the frequency.

Alexander has also referred to economy in therapy by calling attention to the fact that retreat into the past is valuable in so far as it sheds light upon the present; and he therefore believes that the nearer the analyst can keep the patient to actual life problems, the more effective is the therapeutic process. The time in the patient's life when he refused to mature or grow up is considered the beginning of the neurosis. Recalled material which antedates this phase is recognized as an expression of resistance but not of deep penetration in sources of the neurosis.

Alexander has also discussed the advisability of experimenting with planned interruptions in the course of the treatment. He points out that the patient may reach a place in the treatment where he merely repeats himself in order to avoid opening other conflicts or makes a "flight into health" in order to avoid painful recognitions. The therapist may be unable to tell whether the patient is ready to meet life situations or is employing unconscious subterfuge. An interruption in the treatment may clear up the point. The patient may be given some time to determine to what extent he needs further treatment and in which areas he is still uncertain.

Alexander has further pointed out that if the method of preparatory interruption is used, the actual termination of the treatment is unlikely to be artificial but will become a natural ending to the therapy. Thus the experience of the patient as he reacted to previous interruptions is used as a basis for determining when the therapy should be brought to an end. This is seen as an advantage over the use only of theoretical criteria such as the filling in of memory gaps, complete understanding of etiological factors, and the depth of intellectual insight. In many instances the patient may demonstrate his ability to deal satisfactorily with the problems that precipitated his

neurosis before all the etiological details have been completely worked out. In any event the patient will have had an opportunity to "give actual tested proof of his ability to find ego-syntonic gratification for his needs."

Fully recognizing that each patient must be treated according to his needs and his possibilities, those who have been interested in the brief analysis have also urged a more active participation in the question of the patient's extra-therapeutic experiences. Recognizing that the patient must eventually solve his own problems in actual life, they call attention to the fact that the experiences in the transference relationship are only preparations for the problems that must be met in real-life situations. Therefore, the sooner the patient can be induced to engage in new methods for meeting his problems, the more quickly can satisfactory therapeutic results be achieved.

If the course of therapy is shortened, the plan of treatment must be based on the appraisal of the patient's personality and the life problems that he has been unable to solve. The therapist must be able to recognize the precipitating difficulty, the patient's capacity for gaining insight, and his ability to use his insight for changes in the pattern of living. Several interviews may be necessary to determine whether the patient may be aided by a primarily supportive type of treatment or whether a deep analysis of underlying dynamic factors is necessary. Many therapists call attention to the danger that the brief psychotherapy that is primarily supportive may be too superficial to be useful. They point out that the analysis may be symptomatic, that the resistances may not be sufficiently cared for, that no dynamic understandings may develop, and that the therapist may make decisions instead of allowing the patient to reach them. A great number of therapists, however, take the position that brief therapy is essential in many cases and that, in general, it will be satisfactory if there is a sound patient-therapist relationship and the utilization.of sound genetic-dynamic principles.

CASE SUMMARIES

The various analytic therapists do not differ completely one from another, but the differences in theoretical position may result in many differences in therapeutic approach and interpretation. In considering the dynamic factors of the illness, one would be influenced by his theoretic background. The following case summaries are presented to provide some appreciation of a variety of approaches to the understanding of a particular case. It is fully recognized that the proponents of special points of view may not agree with the treatment of their theories and techniques.

CASE I

A woman in her early forties came to psychiatric attention because of a recent serious increase in her solitary use of alcohol to which she began add-

ing sedatives and narcotics. She spoke of suicide. The woman was tall, slender, boyish, with few well-developed secondary sex characteristics.

Her mother was a conventional, prudish woman whose husband had left her for another woman when the patient was six. The patient was her mother's favorite of two daughters; the other daughter married and lived away from her mother. The patient was a serious child, shy, good, but unpopular with boys. She became a stenographer, living with her mother and married a young man still in college whom she worked to support. They lived together with her mother, at times in one room. After the graduation, the husband rapidly became successful with considerable help from his wife. Meantime, her health failed. Tuberculosis of the lungs was discovered, and she spent three years in sanitarium treatment. Thereafter she avoided pregnancy, although there was no sign of relapse of her cure. She tried and failed to share her husband's expanding interests and ceased to be useful to him as a means of support or as his secretary. She had many minor complaints, but chiefly menstrual cramps, for which she resorted to whiskey and opiates. Her mother continued to live with her and had dominant control of the household. Her husband spent increasing time away from home. She was treated in a hospital along dynamic lines, but not strictly psychoanalytically. Her attitude was that of a somewhat forced bravery, punctuated by much anxiety, a clamoring for attention and an effort to have her way about everything. Her manner was immature for her years.

To the Adlerian, her physical inferiority and efforts to compensate and her final acceptance of the role of an invalid would be impressive. Her tuberculosis and her menstrual difficulties would indicate organic inferiority Her dependence on her mother and her efforts to support a husband would seem to be efforts to compensate. Her coldness to her husband in sexual matters would deny her sexual inadequacy and set her up as an outraged, neglected person. Her style of life, that of an invalid, failing to hold her husband's attention, permitted her to slip into addiction and a further childlike dependence.

A Jungian psychologist might sense this woman's failure to emerge as a person, her persistence as an infant, depending upon her smothering mother for ideas and attitudes. He might see her addiction as an effort to acquire the spirit which she lacked and to achieve a feeling of significance and security. He would certainly want more information about her dreams.

A Rankian psychiatrist would surely be impressed by her lack of a will to recover, to be responsible for her life. He would see her determination to use him to enable her to control others through her illness. He would possibly regard her as unsuited because she was unwilling to accept treatment.

A Freudian would want to know much more about her dreams and fantasies. He would want more evidence from her free associations and her

transference behavior But without all of these, he might still speculate upon the failure of a workable solution of her Oedipal conflicts; he would note that her mother is an aggressive, domineering, possibly a penis-envious woman, that possibly for these reasons, her father left when she was six, at a time when she acutely needed him. He would note the evidence of her avoidance of adult femininity, difficulty with menstruation, the avoidance of pregnancy, and he would note the displacement into tuberculosis of the lungs. He would assume that fear and anger underlie her submission to her mother and would note the regression to oral levels, alcohol and drugs.

Perhaps, were this woman studied at length by a widely informed analyst, it would be found that there is much basis for all the opinions expressed about her. The practical question would be which of the facts offers the best chance of modification in the direction of more mature, rational performance. It may be added that this woman was studied briefly by an analyst who recognized in his patient a strong urge to be feminine, powerfully repressed in the interest of cooperation with the feared and hated mother. The repression of hatred robbed her of self-assertion except in masochistic and symptomatic ways: frustration, repressed guilt, and hate resulted in depression, which was fought off by alcohol, narcotic stupor, a sort of minor substitute for suicide. The conflict most clearly formulated by the patient herself was whether to live miserably or to die. To live comfortably was beyond her courage without the help of transference to her father figure in the analyst.

The second case is abstracted from a longer account presented by Dorcus and Shaffer (1950).

CASE II

The patient is a 39-year-old white, single male. After a year of military service, he was discharged because of medical reasons. Unable to work or make an adjustment to life since his discharge, he has been hospitalized in 2 hospitals for a total of 18 months. At the time of his present hospital admission, the symptoms were depression, suicidal thoughts, and numerous physical complaints.

Although Joseph weighs over 200 pounds, is brawny and rough looking, he gives the impression of being an overgrown boy, of putting on an air of bravado to hide his inner panic. Upon admission, he made many demands for attention and would constantly ask the ward physician to explain the meaning of innumerable fantasies and dreams.

His parents were born in this country of Roman Catholic immigrants from a small European country who had settled in a seaport town on the West Coast. Joseph, senior, now dead, was a huge man, a hard worker, and a hard drinker. At one time in charge of hiring stevedores, he apparently provided an adequate living according to the standards of the family's environment.

His wife had six children before his death. The oldest, a boy named after his father, was followed by five sisters.

The patient's mother married in spite of the responsibility of six children and bore five more. Of this second group, the patient was the second, following a brother two years older. Then there were two sisters and another brother. The home was dominated by the father, who was quiet, considerate, and kind when he was sober. However, when he was drunk, he became nasty, aggressive, and destructive. Terrified, the children would run for safety. The patient's place of security was under the sink. When the father was sober again, the mother would belittle him and drag him to the priest to take vows of abstinence. She was described as a hard, cold person whose emotional life was transferred to the church. Fascinated by death, she attended wakes for miles around, forcing the children to go with her.

The patient's childhood was a rough and tumble existence with other children in the neighborhood. His education was of a strict, authoritative type in a parochial school. Early in life he had some difficulty with constipation and was for years given enemata by his mother. Then he developed definite hostility toward his sisters and a feeling of rivalry toward his older brother. A good student, he was eager to have a complete education; but when he was in the first year of high school, his father lost the family savings in some unwise investments, and the patient was forced to go to work.

For about 12 years, his work record with a large firm was stable. He took part in the usual drinking, parties, and sexual adventure. When, however, he acquired gonorrhea, he was greatly frightened and shamed. Then his older brother died in a mental hospital, and some time later his younger brother contracted tuberculosis. The patient himself had pneumonia and was obliged to spend a long time in convalescence.

After this, he left his job, drank excessively, and depended upon political patronage for work. Because of tension, shakiness, and sensations of throat constriction, he underwent a thyroid operation, but had little subsequent relief. His work constantly deteriorated until he was in a low economic group. During the war, there was some question of accepting him for service because of his physical and emotional complaints. Actually, he was hospitalized for a time after induction, returned to duty, then finally discharged within a year for nervousness. He received a government pension, but has not been able to hold a job since his discharge.

Wandering from city to city, he became increasingly more nervous, complaining of headaches, noise sensitivity, constriction in throat and chest, weakness and shakiness. He was preoccupied with fears of disease, especially tuberculosis and epilepsy. With religion he moved from ecstasy in fantasies to intellectual defiance and hostility. His general depression and apathy increased, but he showed aggression in his demands of hospital personnel for

psychiatric aid. These demands increased with an exaggeration of his fears and symptoms when his pension was cut off. All physical examinations, including electroencephalogram, basal metabolism, and blood tests, were entirely negative.

The diagnosis was psychoneurosis, mixed type. Because of recurring phobic reactions, fear of disease and death, some paradoxical thought of suicide, preoccupation with geometric designs, and repetitious fantasies and ambivalent attitudes, he reveals much of an obsessive compulsive nature. These characteristics, as well as frequent periods of marked anxiety and depressive reactions, show the mixture of syndromes so often found in the severe psychoneurotic.

In the Adlerian approach an attempt would be made to understand the life goal and to evaluate the methods utilized for the acquisition of power. Attention would be directed to the many indications of organic inferiority both in the patient and in his family. The father would be seen as having a central nervous system injured by alcohol. A younger brother had tuberculosis and an older brother, greatly respected by the patient, died in a mental hospital. The patient, himself, has been constipated all of his life, necessitating enemata by the mother. He has had a thyroidectomy and has almost died of pneumonia. He developed an intense anxiety when it was discovered that he had gonorrhea.

The development of social inferiority would also receive much attention The father must be viewed as a social outcast as a result of his frequent alcoholic disturbances and his failures in pledges of abstinence. The patient himself was unable to satisfy his desire to attend college and lost both educational and social esteem. The older brother died a broken man.

The urge to power might be seen as being blunted by a powerful, fearsome father and by organic and social inadequacies. It might be speculated that his urge to power was to be physically dominant like his father or to be well educated and a social success. He was no match for the series of inferiorities, and the result was a neurosis with the development of many physical complaints. The urge to power may be seen as being distorted into compelling society to take care of him. The therapy might perhaps be designed to enable him to approach the ultimate goal of a compromise with society.

A possible Jungian formulation of this case might be as follows: The sequential order of the siblings in determining the presence of parental substitutes would be considered important. This sibling order along with the description of the parents might lead to the concept of a strong mother and a weak father. It could be deduced that the father, like the patient, had a mother fixation. The patient could thus be viewed as having become the psychologic reproduction of the father—a femininely oriented figure. His inability to work might be interpreted as an unmasculine attitude and his

neurosis, therefore, symptomatic of the feminine in a male body. Even the dependence upon politicians for work might be viewed as being equivalent to depending upon mother.

The therapy would be primarily that of a psychosynthesis with much direction from the therapist. Much of this would be accomplished through the interpretation of dreams with considerable attention to archetype symbols.

In the classical psychoanalytic formulation, attention would first be centered on the importance of the parental figures. The father would be seen primarily as a terrorizing, primitive figure, the mother as a cold, gloomy, basically sadistic person. The analyst would consider that the patient had not received from the parents the love and attention that were necessary and would be impressed by the fact that the patient had no one to "identify" with, no one to be like or to imitate. The patient would be viewed as having been a lonely, deserted child who could expect only punishment from his parents. The superego would be seen as extremely severe, and attention would be directed to the passive feminine attitude of the patient. Much of his behavior would be viewed as regressions to infantile attitudes. In this connection his constant demand for security, care, and attention would be marked as being primarily oral. It would be noted that he obtained these attentions by being completely passive and helpless, as manifested by the many symptoms of illness, phobias, and anxieties. Perhaps the greatest attention would be directed to an attempt to understand the development of the patient's hostile, destructive, unconscious wishes toward his parents. In this connection his flight from a socially and economically adjusted life into a neurotic regression would be seen as beginning with his venereal disease. This would be seen as proof to the patient of the punishment for his unconscious childhood fantasies. The patient's alcoholism and social degradation would be viewed in part as imitation of the father and appeasement of his unconscious.

Treatment would be centered on the attempt, through free association, dream interpretation, and use of the transference phenomena, to enable the patient to see the implications of his unconscious hostility and of his death wishes. Gradually the deep, unconscious, primitive fantasies and fears would have to be uncovered. Through his own associations he may be led to recognize and accept the fact that much of his sickness was his self-punishment for his unconscious hostilities. Eventually the punishing superego would have to be dealt with, and his unconscious instinctual drives diverted into socially accepted channels.

CHAPTER 12

DISTRIBUTIVE ANALYSIS AND SYNTHESIS

Distributive analysis and synthesis is a primary psychotherapeutic technique based upon the psychobiologic approach of Adolph Meyer. The major objective of the therapy is to obtain a synthesis of the various factors of the personality organization that will give the patient security. The therapy provides for the analysis of all the factors and situations which are important in the development of the personality. Although the pathologic reactions which bring the patient to the therapist are given special consideration, the analysis is distributed along the lines of psychobiological integration. Thus not only the patient's complaints and symptoms must be analyzed but also the formation of his personality attitudes and his habitual emotional responses. The therapist must consider the patient's attitudes to the past and to the future, his imaginations, and his habitual responses to situations of stress.

In contradistinction to psychoanalysis, an effort is made from the beginning to obtain a synthesis of the material developed in the process of the analysis. In spite of the fact that a complete synthesis must wait until all the factors have been analyzed, every effort is made to develop a synthesis at the close of each therapeutic consultation. In this way the therapist, and to a considerable extent the patient, is enabled not only to formulate what has taken place during the analysis but to gain practice in the constructive use of the material for the understanding and development of healthy personality attitudes.

The psychoanalysts have taken the position that success in analysis depends in part upon the fact that the therapist himself has been well analyzed. Distributive analysis and synthesis takes cognizance of this important point and emphasizes the fact that every therapist must have a good understanding of his own personality. This is not only valuable as a means of increasing the understanding of one's patients, but also serves as a guard against the possibility of the therapist's becoming emotionally involved with the patient. The therapist must know his own areas of sensitivity so as to avoid becoming preoccupied with them rather than with the areas of sensitivity of his patient.

THERAPEUTIC PRINCIPLES

This therapeutic method is distinguished by the attention that is given to the constructive use of the synthesis. Those who use the therapy call attention to the dangers of mere analysis without the therapeutic guidance in the synthesizing of the products of the analysis. The tendency in analysis is to study failure more than success. In attending primarily to failure the person's assets and successes are likely to be overlooked without the benefit of the synthesis. It is obvious that all persons will make some constructive use of a dissecting of the personality. To believe otherwise would be to deny the existence of a natural tendency for human beings to pull together and synthesize the meanings of their experiences. One of the things, however, that distinguish the abnormal from the well-organized personality is the inability to accomplish this feat. Left to their own resources many sick people are not able to develop normal and obvious associations. In fact, the illness itself is apt to limit the ability to make a constructive synthesis. The therapy, therefore, requires that constant attention be paid to the synthesis. In some instances after every consultation, or at least after every analysis of situations or symptoms, the patient is directed to a review of the ground that has been covered and of its meaning and importance to his personality attitudes. In such a synthesis the therapist will almost always take an active part. Thus the therapy recognizes the possibility that mere analysis may be destructive, since the patient may be left with material that he cannot constructively handle.

The treatment is distributed so as to provide for a wholesome integration of the total personality. Kraines (1948) has called attention to the fact that personality reactions are the result of the constant interplay of biological, sociological, and psychological aspects. The understanding of the person is therefore to be attained by a thorough study of the physical, social, and psychological aspects. The fact that patients are sometimes diagnosed as neurotic because the somatic factors have not been satisfactorily evaluated indicates the importance of a thorough physical examination. Even when the physical examination reveals nothing pathological, the therapeutic relationship may be greatly helped by having the patient know that he has been thoroughly examined for any organic pathology. In view of the tendency of many neurotics to resort to somatic complaint, it is important also for the therapist to be in a position to evaluate the relative role of organic pathology and the emotions.

The examination of social forces is also important, since the formation of the personality is greatly dependent on these forces. Each stress has some effect upon the personality. The extent of this effect is dependent upon its intensity and the susceptibility of the organism. Kraines has said (p. 125):

> Consequently, it becomes important to inquire into the social pressures (1) existing at the time the patient comes in for treatment, (2) those

existing at the time of the onset of the illness, and (3) those which have existed as determining mechanisms from early life. . . . It is necessary to know what pressures exist at the time of treatment in order to be able to understand the obstacles of the treatment. Knowing the social pressures existing at the time of the onset of the illness will facilitate the explanation of why the particular tension and symbolic symptoms occurred; and determining the forces existing earlier in the patient's life will enable the physician to understand the susceptibility of the patient. The understanding and proper evaluation of these factors is essential to the development of a satisfactory synthesis of the psychological processes which constitutes the core of the therapy.

Distributive analysis and synthesis is an elastic method of therapy which lends itself to the treatment of psychotic as well as psychoneurotic and minor personality disorders. The therapy is not carried out along preconceived lines of leading situations or dogmatically accepted principles, but emphasizes plasticity in procedure. No rigid systematic outline is followed, the therapeutic attacks being distributed according to the opportunities that present themselves in the course of treatment. The patient's complaints are never minimized, but are seriously investigated and reduced to their actual value. In the course of the treatment, certain symptoms and abnormal reactions may be found to be clearly associated with concrete episodes or may be suspected of being so associated. Such factors are studied for their origin, possible conditioning, or relationship to common elements. Then they are carefully analyzed. The theory that certain factors are always present is not accepted as a basic principle but is tested on actual material. All situations are investigated, and attention is given to the present, past, and possible future of the patient. Analysis of the past is viewed as important, since it is recognized that early experiences tend to mold the personality and also since the past offers historical material for the understanding of the original personality make-up and its development. However, the therapist recognizes the fact that the history and interpretation are given in terms of the present situation and attitude and are, therefore, open to considerable possibility of error. Every effort is made to check for possibility of error or misinterpretation. Since isolated incidents, especially those of the past, are hard for either the patient or the therapist to integrate, the synthesis of such factors may prove to be extremely difficult.

DEGREE OF DIRECTION

In an earlier section reference was made to the fact that psychotherapies may be classified as being either directive or nondirective in type. As one studies the methods and practices of therapists, it becomes increasingly evi-

dent that, regardless of the type of therapy used, the amount of direction is a matter of degree. Even in psychoanalysis the amount of direction used by the therapist will vary considerably, depending upon both the individual therapist and the problems of the patient who is analyzed. In distributive analysis and synthesis, as in other therapies, the amount of direction is variable. More frequently, distributive analysis is carried out in a direct approach, the patient and the therapist discussing the problems in what is for the most part an ordinary conversation. This does not imply that the situation is one of interrogation or of simple question-answer relationship. Questions are used in order to direct the patient's attention to definite situations or reactions which he is urged to study and discuss in an effort to develop an understanding of the factors involved and their relationship to the development of his symptoms.

Facts of experience or general problems may thus be presented in the form of questions which the patient may study, critically review, and discuss. Frequently the patient's own statements may be referred back to him in an effort to help him put them into proper and useful perspective and to elaborate them. Since most people have a greater tolerance for the past than for the present, it is believed to be more profitable to begin by analyzing past occurrences. By this sequence, those who have had experience with the therapy believe that the objective attitude, so necessary for the synthesis, is best attained. In the direct approach the therapist guides the analysis along the lines which seem most profitable for the patient. In many instances it may be advisable to terminate a certain line of inquiry temporarily in order to save time or to prevent a setback in the patient's recovery. This is true particularly if the patient becomes involved in a discussion of certain features of his personality which he is not yet prepared to analyze constructively or to understand. He may, for example, discuss certain broad areas of sensitivity such as religious, ethical, or sexual problems which cannot be satisfactorily dealt with or understood until other problems have been analyzed. The therapist may then terminate the analysis of one problem when it seems to have been arrived at prematurely and when it appears evident that the problem cannot properly be handled until insight has been obtained through the analysis of other life situations. As in other therapies, the patient may be expected consciously or unconsciously to use various devices to avoid the discussion of topics of great sensitivity. Such blocking will be evident in his arguing, diffuseness, rationalization, or dearth of ideas. When such a difficulty arises, it is usually called to the attention of the patient and presented as a topic for discussion. This, however, is not an invariable rule, and in some instances it is assumed to be best to leave the topic on which the blocking has occurred and to direct the discussion to problems that may be more profitably pursued. This plan is most frequently followed when it is believed that satis-

factory handling of the problem must wait until the patient has gained a better understanding of himself.

In some instances the therapist may decide that the nondirective approach may be more effective for a particular patient. This may be especially true when it appears evident that recovery will depend upon the uncovering of depth factors that are most likely to be reached by other methods. Frequently in such instances the method is that of free association. If the treatment is apt to be a long-term one, the method of free association used is rather typically analogous to the Freudian method. In other cases the passive Freudian procedure is modified by the use of some interruption and direction. In such instances the therapist may interrupt the patient's flow of ideas whenever it seems pertinent to do so. A brief remark or a question may be used to direct the flow of associations into another channel. The therapist may even call attention to factors which the patient has missed or formulate concepts which include dynamic factors which the patient has not observed or accepted. Thus the principles of analysis and synthesis may utilize the method of active free association.

When the more nondirective approach is being used, the therapist may also give attention to dreams and symptomatic acts in a way that somewhat resembles psychoanalytic treatment. Usually, however, the handling of the dream material and the symptomatic acts will be that of a more active analysis and synthesis than is characteristic of the classical psychoanalysis. Use is made of the association tests and other projective techniques in the treatment. The relatively unstructured material of the projective tests has the advantage of throwing the patient off guard and may therefore result in the patient's revealing personality traits and attitudes that may be difficult to obtain otherwise. The material obtained from the patient in this way may then be presented for discussion and elaboration.

Regardless of whether the treatment is directive or nondirective in approach, the ultimate goal is the same. Diethelm (1950, p. 131), who has had long and successful experience with the method, comments as follows:

> The ultimate goal of the treatment is to establish in the patient a feeling of security based on self-dependence, combined, however, with the ability and willingness to be an integrated part of the group in which he lives and of society in its broadest sense. Constant attempts at restoring or increasing self-reliance will allow the physician to proceed on more or less safe ground and will not lead to disastrous results if the treatment has to be stopped for financial reasons before the goal has been reached. It is not necessary for all of the symptoms to disappear, but the patient should be able to consider them as incidental, or as an indication of a disturbance within himself which should be investigated. To this group

belong the many reactions which involve the vegetative nervous system and which occur in a more or less specific form in every individual who is under strain. Some constitutionally disposed persons react readily with emotional changes. Tendencies to hypochondriasis and anticipation, compulsions and obsessions, tics and stuttering, and undesirable sexual strivings, rarely disappear completely under treatment. One should not expect to achieve "perfect" results but should keep in mind the fact that no one is without some of these tendencies, and the "normal" person can deal with them constructively.

Frequently one is not able to reach this goal, and the patient may need guidance for years, or even during the rest of his life. A more or less permanent relationship of physician and patient is, however, based on cooperation and collaboration and is not cultivated as a dependence upon the physician.

RELATIONSHIP TO OTHER METHODS

The contrast with other methods, especially the analytic treatment of Freud, is clear. We shall emphasize only a few important points. While the relationship between physician and patient receives much attention, it is not used as a basis for the analysis but only in order to reach a better understanding. The help-seeking attitude of the patient cannot be avoided, but this is not encouraged; and from the beginning one tries to dissolve dependence upon the physician. The actual fostering and utilization of transference in the sense of the psychoanalytic transference neurosis is considered undesirable in most cases, especially in the definitely sexual realm. However, the physician does not ignore the transference relationship and makes use of it whenever possible. Countertransference is not stressed in the psychoanalytic way, but the interesting and valuable observations of the Freudian school are well recognized for the light that they have shed on the therapeutic dangers that may be encountered if the therapist does not have a satisfactory understanding of his own personality attitudes. Although free associations are utilized, they are always under the active guidance of the physician. Active synthesis and even advice are considered necessary; spontaneous synthesis is usually not sufficient. In the largest group of patients interest is directed more to actual situations and symptoms than to detection of unconscious attitudes and mechanisms. The factors of repression and also regression and resistance are accepted, but they are not looked upon as the dominating principles in personality disorders. The therapist does not analyze problems in order to find these dynamic factors but is willing and able to recognize them when they actually appear. He should distinguish between the healthy repression of experiences to which the patient has made an adjustment and the unhealthy repression which serves as an avoidance of understanding and adjust-

ment. Infantile sexuality also is viewed from such a standpoint. The goal of analysis is less to have the patient relive early experiences than to have him understand the present meaning of these experiences and his present attitude to them. It is emphasized that many of the patient's experiences may be conscious, but for various reasons, he hesitates to associate to and utilize them.

The therapeutic goal is thus a complete integration instead of mere desensitization. This goal, however, cannot always be reached, and desensitization is important in cases where experiences cannot be changed. Desensitization based on a genetic-dynamic understanding is also used to overcome certain undesirable tendencies, such as oversensitiveness to one's inadequacy. Resistance is analyzed carefully whenever it occurs but may be studied and handled on the basis of the whole personality setting as well as through the uncovering of unconscious motivation. The contributions of the psychoanalytic school to all these factors should be understood. However, they are not used as guiding principles but as possibilities which the physician should keep in mind and be able to recognize. The occurrence of situations which indicate resistance or repression is considered an opportunity for therapeutic help which is offered immediately when those factors appear or is delayed until later, according to what seems more advisable. Sexual difficulties and the expression of, or even tendencies to, sexual perversions are evaluated in the whole setting. Their presence does not necessarily prove their fundamental dynamic importance. They may form a leading issue or be merely incidental. Their thorough analysis may be indicated, or, in some cases, a less aggressive treatment may be more constructive.

The elasticity of this method of treatment allows for the use of suggestion, hypnosis, catharsis, reeducation, and desensitization wherever they seem to be desirable therapeutic aids. The method of approach may shift according to the needs and understanding of the patient. The beginning approach depends upon the therapist's careful formulation of the patient's problem. This diagnostic formulation should include the main reaction type, the phase of the illness, and the personality setting. In order to plan the treatment properly, it is important to gain in the first few consultations a good preliminary understanding of the basic personality, the life setting, and the development of the illness. The most desirable kind of routine may thus be determined. In this connection, the phase of the illness may be particularly important, since many factors which cause considerable stress during one phase of the illness may be of little importance in consideration of the total picture. A decision may have to be made regarding the desirability of attempting to remove the symptoms immediately. While it may be best to do so in some instances, in other cases it may be advisable to neglect the symptoms and utilize their disagreeable effects on the patient as an incentive to work assiduously to get well.

The therapy not only recognizes the need for reeducation procedures with some patients but offers in the procedure itself some reeducative values. This is in part accomplished by putting the patient under the responsibility to produce something new in each session. This serves the dual purpose of giving the patient a better understanding of himself and of reeducating his faulty habits of thinking and his tendencies to evasion and procrastination. The reeducation is adjusted to the individual's need. Any question asked must be broad enough not to include an answer for the patient. Thus the patient is led to consider various perspectives.

In some cases psychotherapy will be utilized without any treatment of the environment. However, since the therapist shares with the patient the responsibility for the patient's behavior during treatment, it is believed to be important for the therapist to keep some contact with friends and relatives. The problems of self-reliance, self-assertion, and the need for independence may also have to receive attention. In some instances some actual restrictions may be advised, but these are never disciplinary restrictions; they are imposed rather to enable the patient to become aware of the strength of his drives as well as his more habitual reactions to the interference with the gratification of his desires. In others, social and occupational adjustments may appear to be of paramount importance, and attention will then be given to practical life adjustment. There the adroitness of the therapist is again of special importance. The patient who needs socialization cannot simply be pushed into group contact, for this may do more harm than good. The patient's opportunities and needs must be studied, and he must be encouraged to find opportunities rather than be pushed into them.

SUMMARY

In conclusion it may be emphasized that distributive analysis and synthesis is a method of treatment that follows no rigid rules of procedure and has as its ultimate goal the highest degree of security for the patient. There are no specific steps that must be followed, and use is made of any of the therapeutic devices according to the needs of the patient. The use of the method requires thorough psychiatric understanding, since the therapist must shift his therapeutic procedures according to the needs of the individual patient. Where there are no absolute rules of procedure, the possibility of mistakes is increased. One of the greatest dangers of the method is that the therapist who is not well trained will ask the patient pointed questions that require direct answers rather than submit problems that enable the patient to develop various perspectives. Thus the method may easily result in a superficiality which is useless to the patient. As in all therapies that are mainly directive, one of the great dangers is that of offering advice too freely instead of giving the patient the opportunity to develop his own solutions. For the well-trained

therapist, however, the method has many advantages. The continuing synthesis gives the patient a growing understanding of his personality problems and his typical method of dealing with them. The successful handling of the synthesis also has the tendency to prevent the development of futility that occurs so frequently in patients who undergo intensive analysis. In a properly conducted use of this method, the therapist recognizes the futility feelings and directs attention to a constructive discussion of assets. Since in such periods of futility the patient may discontinue treatment or give way to suicidal impulses, it is considered to be important to treat the futility directly or to turn the discussion into other channels.

The analysis and synthesis may be terminated whenever it seems wisest to do so. In some instances a brief analysis will be sufficient to achieve a personality synthesis. In other instances the depth of the analysis may be comparable to that of the classical psychoanalysis.

CHAPTER 13

SPECIAL PSYCHOTHERAPIES

In the preceding chapters various methods of treating psychological maladjustments have been presented. We have noted that, while each method possesses certain unique and distinctive characteristics, they are not mutually exclusive. Within the framework of each distinctive therapy, certain features of other methods are utilized. It is also evident that the techniques differ in the degree to which certain variables make their appearance. These variables include such things as the amount of authority and direction, degree of depth analysis, extent of synthesis, use of support, attention to outside environment, amount of time used in treatment, attention to past history and development, and degree and use of various diagnostic and psychodynamic aids. The extent to which these variables make their appearance in the treatment is not entirely dependent upon the method of treatment. Therapists within any one of these particular methods may vary considerably in the use of these factors, and one particular therapist may show great variability, depending upon the type of patient and the situations under which the treatment must be accomplished.

Students of psychodynamics, using these methods as starting points or in many instances as points of departure, have developed various special therapies. Utilizing certain features of one method which they consider valuable, they have combined them with other insights to develop a new method of attack. Thus the passivity of the therapist, the free association, transference, and importance of feelings in psychoanalysis became important in the development of nondirective therapy. However, in nondirective therapy these factors are far from identical with psychoanalysis, and in addition the method presents features that are new.

The development of many special methods of treatment came in response to demands that could not be met under existing circumstances without the development of new techniques. First, the organized methods of therapy were designed for the treatment of adults. While some of the principles could be used with children, there were many difficult problems; and it was obvious that changes had to be made and new techniques developed. The rise of interest in the problems of childhood and adolescence, coupled with the interest in prevention, stimulated the search for new methods of approach. The scarcity of competent psychotherapists had a similar result. Since the

treatment was in most instances time-consuming and the number of people who needed help was far too large for the number of therapists, it was clear that drastic steps were necessary to meet the problem. While small gains could be made by training more therapists, this did not begin to fill the needs of the situation. Attention had to be directed either to shortening the course of the therapy or to making it possible for one therapist to treat several patients at the same time. Actually, strides were made in both of these directions. Some mention has already been made of the shorter course therapy, and the best account of this advance may be found in Alexander and French (1946) The second of the realizations resulted in the development of special methods of group therapy. The extension of psychotherapy to the treatment of the milder difficulties, coupled with the growing willingness of people to subject themselves to treatment, provided further stimulus for the development of new techniques.

Clinical psychologists have been active in the development and operation of many of these techniques. They have been serving in child guidance clinics, children's hospitals, outpatient clinics, psychiatric hospitals, and with the courts, schools, and colleges. Their work as therapists, as therapeutic aids, and their researches have resulted in the development of new techniques. No attempt will be made here to discuss all the special methods, but attention will be directed to nondirective therapy, play and release therapy, group therapy, and the psychodrama. It is recognized that the term "special therapy" does not properly describe them and that for many purposes they would not be discussed in the same section. It will also be evident that they are not separate and distinct from each other. The nondirective approach, for example, may be utilized in play and release therapy, and children may be treated individually or in groups.

NONDIRECTIVE THERAPY

The role of the early psychotherapist was extremely directive as was the role of the general medicine man. The patient was accustomed to visit the doctor, describe his symptoms, be examined, and to have the treatment prescribed or outlined by the physician. In much the same way that medicine was prescribed, the doctor prescribed rest, change of occupation, a change of scenery, and finally a variety of more detailed suggestions. Thus the patient might be told that it was important for him to find a mate, to emancipate himself from his family, to divorce his wife, to change his philosophy of life, or to completely reorganize his habits. Prescriptions were given not only for overt behavior but for direction of thought and emotional attitudes. In some instances the method of such accomplishment was only vaguely presented, while in other instances a definite and complete daily routine was established.

When the treatment of mental disorders became a specialized therapy, the

dominance of the therapist was firmly established. Most of the early treatment was directed toward the psychotics who were ill enough to be hospitalized and for whom much direction was necessary. The authoritative methods of the hospital were carried over into outside practice. Otherwise the kind of advice and direction given by ministers and teachers was repeated in an effort to bring about readjustment in the emotionally maladjusted. The dominance of the will, training, and regulation were everywhere evident. In much the same way psychologists in the development of counseling and guidance service fell into the natural pattern of directing the course for satisfactory living.

Gradually with the development of a better understanding of the dynamics of the personality structure, the authority and direction of the therapeutic interview were lessened. The development of psychoanalysis was particularly helpful in this change of attitude. Even those therapists who were directly opposed to the psychoanalytic theory became aware of the fact that the patient could not change simply by being told to do so. In addition, two particular dangers of the direct approach were subject to constant attack. In the speed of the direct approach, the therapist is in danger of coming to wrong or imperfect conclusions, and his consequent directions may be harmful to the patient. Second, even when the deductions of the therapist are correct, the direct and authoritative presentation of them makes it impossible for the patient to accept them or deal with them. Gradually most therapists became less directive in approach and gave the patient more time for free expression both with regard to the understanding of his problem and the working out of the solution.

Formal efforts to overcome the disadvantages of directive therapy may be recognized in the will therapy of Rank and the relationship therapy of Taft. Rank (1936) referred to the conflict between two persons which existed in the therapeutic situation and made the point that the patient should be given ample opportunity to exert his will in dominating the therapist. Taft (1933) called attention to the tendency of therapists to place too much emphasis on the presentation of intellectual explanations. She pointed out that the relationship between the therapist and the patient was much more important and that good therapy therefore depended primarily upon the establishment of a permissive situation in which the patient was dominant and given free rein for the expression of his attitudes. The emphasis upon the importance of the transference in psychoanalysis in general tended further to establish the nondirective approach.

Upon the foundation of these positions Rogers (1951) proposed a nondirective or client-centered therapy putting the responsibility for personality development almost entirely upon the patient. In developing his method of therapy or counseling, Rogers gave particular attention to the kind of therapeutic relationship that should be established and to the structuring of this

relationship so as to make it clear to the patient or client. He emphasized the fact that this kind of counseling was not a problem-solving one but rather one that provided the opportunity for dynamic growth, and he defined the major task of the therapist as that of responding to the patient's feelings rather than to the intellectual content of his verbalizations.

In this method the individual, and not the problem, is the focus of attention. The aim is to establish independence and integration of the individual. In some of the more directive therapies a frontal attack was made on the patient's problem with the assumption that somehow, with the problem out of the way, satisfactory adjustment would follow. In contradistinction to this point of view Rogers directed his attention toward assisting the individual to grow, on the assumption that his attained independence and integration would enable him to make satisfactory adjustments. The therapy relies neither on doing something to the patient nor on inducing him to do something about himself but rather on his own drive for health, adjustment, and the freeing of his energies for normal growth.

Feelings and emotions are given considerably more attention than the intellectual aspects of the situation. In other words, the failures in adjustment are not seen as dependent upon lack of knowledge, but rather the effectiveness of the knowledge is blocked by feelings and emotions that are not understood. The necessary emotional reorganization is not achieved through the intellectual approach but by attending directly to the feelings and emotions. The method also gives greater attention to the immediate situation than to the patient's developmental history. The adherents of the theory point out that often a better picture of the individual's dynamic development emerges in the absence of probing for such a history.

Of perhaps greatest importance is the position that the growth takes place directly in the therapeutic relationship. Rogers has said of the therapy that it is not a preparation for change but that it *is* change. The essential features of the method are, then, (1) the individual, not the problem, is the focus; (2) feelings rather than intellect are attended to; (3) the present is given greater attention than the past; and (4) the growth takes place in the therapeutic relationship.

The therapy begins with what Rogers calls "structuring." This involves some explanation of the roles of the counselor and the client and serves the purpose of indicating that they may work out the difficulties together. An atmosphere of warmth and responsiveness is established more through what does not happen than through what does. That is, the general permissiveness of the situation, the lack of pressures to follow a prescribed course, the absence of criticism or judgment serve the purpose of beginning to establish the necessary relationship. Care is taken to prevent the client from developing an attitude of dependence, and consequently statements of reassurance must be guarded against. To establish the atmosphere of warmth and permissive-

ness, the counselor relies primarily on recognition of feelings. Reassurance may be given by attention, tone of voice, choice of words, and general bearing and manner. As the client becomes more comfortable, he states his problem and expresses many negative feelings toward himself and others.

The method assumes that the best route to the important issues is to follow the pattern of the client's feelings. The purpose of the counselor is to help the client to express his feelings freely, and this he does by responding verbally to the feeling rather than to the intellectual content. Since most of us are accustomed to attend to ideas rather than to feelings, this new practice requires training and experience. This method must be followed regardless of the type of emotion expressed or the person to whom it is directed. Thus positive, negative, and ambivalent feelings must be responded to regardless of the person toward whom they are directed. As these feelings are responded to, the client gains in his ability to recognize without fear his own feelings, and he finds it possible to express feelings that were formerly repressed. He begins to see new relationships in his emotional attitudes and to react positively toward situations that were formerly responded to negatively. Insight occurs spontaneously, developing gradually from less to more significant understandings. That is, as the client perceives new relationships and shows a willingness to accept all aspects of himself, he becomes better able to understand his goals and begins to take some of the steps that are necessary for adjustment.

The growth now becomes evident in the self-initiated steps that are taken to achieve his new goals Such steps are progressive, beginning with minor issues and proceeding to more important ones as confidence and independence are attained. In this period there may be some minor retreats during which time the behavior is characterized by efforts to decide the course of action. As the client gains in self-confidence and understanding, he begins to initiate more positive actions. There then appears the ambivalence of wanting to be through with the treatment and at the same time to hold on to the support that it provides. By responding to these feelings the counselor helps the client to understand his fear of making choices and his ability to handle his problems independently. As the feelings of independence are recognized, the counselor's acceptance of these feelings helps the client to understand that he can end the relationship. Thus ideally the therapeutic relationship closes with a mutual recognition that new growth is further indicated by the feeling of independence.

While the method provides for considerable latitude in the time given to the clients, the interview is usually for one hour and is scheduled once or twice a week. The interviews, however, are so arranged as to make it clear that there are definite limitations upon the demands that may be made on the counselor. The client is early encouraged to realize that the interview is not to be extended beyond the agreed time and that he is not expected to

drop in casually for extra interviews. If the client is late for the interview, no effort is made to make up the lost time. However, the scheduled interview time is given over entirely to the desires of the client. The counselor not only allows the client to dominate the hour but does not allow the interview to be interrupted by messages or telephone calls. Every effort is made to prevent the development of a dependent relationship. Consequently the counselor avoids becoming involved in manipulations of the client's environment. He does not use his influence to change the conditions under which the client lives and even avoids giving information. When the client requests information, the preferred method is to refer him to a convenient source. This is, of course, not an absolute rule, and in situations where there is danger of loss of rapport some generalized information is supplied. The therapeutic situation is, then, one in which every effort is made to provide a relationship that is warm and permissive but at the same time prevents the development of dependence upon the counselor.

The therapy has been most effective in the counseling of college students and in the treatment of marital and vocational problems. Little success has been had with excessively dependent persons or those with extreme emotional difficulties, but mild psychoneurotics and normals with adjustive problems have responded well to the method. As with most therapies, those of advanced age and those of below average intelligence do not respond well.

PLAY AND RELEASE THERAPY

A variety of techniques used primarily for the treatment of children have been referred to as play or release therapies. The development of the techniques is dependent upon the belief that the avenue of play provides unusual opportunity for the relief of tensions, the development of insight, and the healthy growth of the child. Puppet shows, finger painting, drawing, modeling with clay, play with toys, and many other activities have been used to secure the desired results.

In some instances the play technique has been most useful as a method of personality study and a means of enabling the therapist to understand the dynamics of a problem situation. Frequently the child will not or cannot verbalize his problems in the first person, but he may reveal much of his inner world if allowed to play freely with toys. Under satisfactory play circumstances the child may give free expression to his fears, conflicts, and repressions. The ambivalent attitudes to parents and siblings, the feelings of unwantedness and insecurity, and the repressed hatred and aggression as well as the fears related to specific situations may all be revealed in play. The child, for example, who could not or would not talk about his car sickness dealt with the problem quickly in the playroom. He placed the mamma doll and the boy doll in the toy streetcar and said that the little boy felt sick. He further

stated that the boy was sick because he feared a truck would hit the car and hurt the mamma. In another situation he played with a small boy doll who would not go to sleep alone in a dark room for fear that the father doll, who did not live with the mother doll, would come and steal him. In the skillful handling of such play situations it is possible for the therapist to develop dynamic understandings that might otherwise be impossible. In addition, as the child is enabled to reveal his strivings, his tensions, and his reactions to family influences, he may himself gain some important insight.

Otherwise, the play or release therapy may be used with emphasis placed primarily on the benefits derived through catharsis and abreaction. Levy (1939) has referred to the satisfactory degree of catharsis that may be achieved and has noted that the therapy is most successful with children under 10 who present a definite symptom picture of relatively short duration. He has suggested that appropriate play equipment should include baby dolls, mother, father, and sibling dolls, animals, transportation toys, drawing materials, and weapons of hostility such as guns and hammers.

The therapy may be individual and consist only of a relationship between the child and the therapist, or it may be carried on as group therapy, several children being present with the therapist in the playroom at the same time. Frequently the two methods are combined. When this is the case, the therapist may decide that one child may begin the therapy under most favorable circumstances in the company of other children and progress from there to an individual relationship. In other instances it may be decided that the reverse is true, and in still other situations group and individual hours might follow a more irregular plan. The fact that the role of the therapist may vary considerably with regard to the amount of guidance, control, and interpretation utilized in the play situation has resulted in the unfortunate tendency to designate the technique involved as either completely directive or nondirective. Some therapists have used an authoritative approach, attempting to alter the beliefs and desires of the child and to bring about changes in attitude and behavior. Suggestion, direction, and advice may therefore be uppermost in the therapeutic hour. Thom (1937), for example, has placed emphasis upon reeducation and habit training. Others have attempted to model the play therapy on the principles of nondirective therapy and have proceeded on the assumption that the individual has within himself the ability to solve his own problem. Axline (1947) has outlined the theory and practice of nondirective play therapy. She has pointed out how in the atmosphere of permissiveness and acceptance the child is the most important person and is in command of the situation. No one tells him what to do, no one nags him or pries into his personal world. He is free to test out his own ideas and to express himself fully without competition with adult authority or rival contemporaries. Axline (1947, p. 17) outlines the situation in these words:

He is treated with dignity and respect. He can say anything that he feels like saying—and he is accepted completely. He can play with the toys in any way that he likes to—and he is accepted completely. He can hate and he can love and he can be as indifferent as the Great Stone Face—and he is still accepted completely. He can be as fast as a whirlwind, or as slow as molasses in January—and he is neither restrained nor hurried. It is a unique experience for a child suddenly to find adult suggestions, mandates, rebukes, restraints, criticisms, disapprovals, support, intrusions gone. They are all replaced by complete acceptance and permissiveness to be himself.

The method assumes that the child will bring his feelings to the surface in his play and will learn to face them, control them, or abandon them. As he becomes emotionally relaxed in his play, he will begin to recognize the power within himself and gradually to develop a self-acceptance and self-sufficiency. In the presence of an accepting, permissive, and understanding adult, he gradually recognizes that the former resistances to his expression of himself are gone. The therapist is sensitive to what the child says and expresses in his play and helps him gain understanding by reflecting back to him the emotionalized attitudes and by making him realize that he is accepted by someone else. In this way he is encouraged to go deeper and to reveal more and more of his inner self. The success of this therapeutic method, like that of nondirective therapy, is dependent upon an inner growth that results in self-acceptance and self-sufficiency.

There is still a widespread difference of opinion among therapists regarding the amount of guidance and direction to be used in play therapy. Those who were formerly extremely directive have been greatly influenced by the work of the nondirective school. The therapist who continually directs and criticizes the child is almost certainly doomed to failure. On the other hand, even nondirective therapists such as Axline recognize the necessity of placing some limitations on the child in the play situations. These limitations are few but are recognized as being important. For example, the child is not permitted to attack the therapist or other children, nor may he take part in activities that are destructive to valuable equipment or dangerous physically to him. The child who mutilates father or mother dolls or kills a sibling doll may develop feelings of guilt, and in order to protect him from such feelings, emphasis is placed upon the play element of these acts. Verbal and symbolic behavior can then assist the therapy, but the therapist must recognize the fact that, although he provides an atmosphere of acceptance, the activities permitted in the playroom might be not only unacceptable but unhealthy experiences outside the playroom. For those who go over rather completely to the nondirective method it may be important to recognize the necessity of

guiding the child to some understanding of the needs, rights, and privileges of others so that he may have some realistic basis for the development of satisfactory interpersonal relationships.

Regardless of the differences in technique, it becomes more and more evident that play offers great opportunity for dealing with the problems of childhood, and the number of therapists making use of the method steadily increases. It is used as a diagnostic technique for an understanding of the symptoms present in overt behavior. It is used as a method to enable the child to gain insight into the meaning of his behavior and to provide parents with understanding and therefore better parent-child relationships. It is also used to enable the child to express himself fully in the presence of an understanding and sympathetic adult.

The use of the play technique with emphasis upon the relationship established between the child and the therapist has been well described by Allen (1942). The therapy begins with an interview of the parent by a case worker while the child is spending the hour with the therapist. The separation from the mother, the entering into a relationship with the therapist, and the necessity of accepting the limitations of the situation tend to bring forth immediately the characteristic feelings and attitudes of the child. The atmosphere is kept as free and permissive as possible, and the therapeutic influence rests primarily upon the relationship to the therapist The time spent at the clinic is viewed as a growth experience for both parent and child.

One of the greatest values of the play and release therapy is the opportunity to provide the parents with some basic understanding of the child's motives and behavior. Indeed, if the basic needs and dynamics of the child's difficulties can be interpreted for his teachers and other adults with whom he is in contact, he may be in a much more favorable position for progress. The child's needs for freedom of expression and the release of feelings of aggression, as well as his ambivalent attitudes to parents and others close to him, may be more clearly understood.

During the course of the therapy or at its termination, it may be evident that some environmental manipulation is necessary. In some instances this may mean only a better understanding and handling by his parents and teachers. In other instances, it may mean getting the child into a group of children nearer his own age, sending him to camp, or changing his school. In more serious situations it may be necessary to remove him completely from his present environment and place him in a home or institution which provides for him a better opportunity for satisfactory growth.

Therapists in general have not been very helpful in providing verbatim reports of therapeutic interviews. This criticism, however, cannot be made of the nondirective therapists. They have made available a great amount of such material so that it is possible to see precisely what the therapist is doing. They not only have provided verbatim accounts of the interviews but also

have indicated the type of response such as clarifying feeling, structuring the situation, restating content, etc.

The following statements are taken from a report by Rogers in Snyder's (1947, pp. 152–157) *Case book of non-directive counseling.* The material is selected from the middle of the third interview with a young female patient. The designation *S* refers to the patient and *C* refers to the counselor.

S71. [PROBLEM—NEGATIVE ATTITUDE TOWARD SELF] Well, I want them—I want them at times, very much. For instance I want to be comfortable when I am with other people—to feel warmth, and yet when I sit down to think about it, it doesn't seem to be a great desire—I mean, it's rather mixed up. Well, I mean—aside from that, when I sit down and think—well, what is it I really want toward life, so that I sort of go toward that direction, I don't really know what I want.

C72. [CLARIFICATION OF FEELING] You know that you do have some desires, and sometimes they're—quite clear, but in general when you really try to figure out what you want, you're just not sure.

S72. [AGREEMENT] That's right. [PROBLEM—NEGATIVE ATTITUDE TOWARD SELF] I mean—aside from the fact that I feel uncomfortable at times—when I draw up against something—or when I sit down and think about it in fear, or something like that—well, that's different somehow. That's just a fear feeling, somehow, sort of. [INSIGHT] But actually if I—if I really knew what I wanted, I think maybe it would help.

C73. [CLARIFICATION OF FEELING] You feel that it would be quite a step forward if you were sure of the place you wanted to go.

S73. [DISAGREEMENT] Not exactly a place.

C74. [MISCELLANEOUS] Well, I mean that in a general sense—

S74. [AGREEMENT] M-hm.

C75. [CLARIFICATION OF FEELING] Things you wanted to reach.

S75. [AGREEMENT] That's right. [PROBLEM] What I really want out of life. (*Pause.*) [ASKING FOR INFORMATION] But then would it really help? (*Laughs.*) Then I think, well, would it really help?

C76. [RESTATEMENT OF CONTENT] In other words, sometimes you wonder, even if you could do that, would that help you.

S76. [INSIGHT—POSITIVE ATTITUDE TOWARD SELF] Well, the thing is, if I felt a strong desire for something, and it were really an honest and sincere desire, maybe other things would come along.

C77. [CLARIFICATION OF FEELING] If you had some really genuine goal, it might do a lot for some of these other things that trouble you too.

S77. [AGREEMENT] That's right. (*Long pause.*) [ASKING FOR INFORMATION] Well, how do you find that goal?

C78. [RESTATEMENT OF CONTENT] Wanted: one goal. Hmmm?

S78. [AGREEMENT] That's right. [ASKING FOR INFORMATION] Why does it seem that just a little thing—an ordinary everyday thing wouldn't be the answer? Why does it seem that just a job, or something, when you go about doing it—[INSIGHT] When I have been working, I forget about the time I was depressed and I wasn't even able to think about working. [PROBLEM—NEGATIVE ATTITUDE TOWARD SELF] And then I get very discontented—and then I won't know whether it's time to look for something better. [INSIGHT] I mean, whether I really feel as though I should progress—or whether it's just a feeling—whether it's just one of those unstable feelings, I mean—that—well, it's just sort of a defense mechanism. [PROBLEM] And then I can't really search my heart and know whether—I don't have that sure feeling of what I should do next, and that in itself bothers me. [INSIGHT] Because that's sort of the essence of progress, I mean, you know that you've gained something, that it's the next step.

C79. [CLARIFICATION OF FEELING] In other words, if you had a goal, even an immediate goal and you had reached it, you could feel your progress, but when your thinking about your goal keeps shifting, then—you just don't quite know where you are. Is that it?

S79. [AGREEMENT] Well, yes, that's it in a sense. (*Pause.*) [PROBLEM—NEGATIVE ATTITUDE TOWARD SELF] The point is, if I wanted to do something great, or what I considered to be great—actually I don't have the qualifications for it because you have to build up to it. [INSIGHT] So that sort of—(*laughs*) well, of course I don't seem to be willing to do the first thing.

C80. [CLARIFICATION OF FEELING] You feel that you're not quite willing to set the lower intermediate goals and still you know you are not really equipped to reach some high-up or far-off goals. Is that it?

S80. [AGREEMENT] That's right. (*Pause.*) [PROBLEM—NEGATIVE ATTITUDE TOWARD SELF] The point is that in my whole philosophy somehow or other I got the crazy idea that I just wouldn't progress—that things just don't grow better. I don't know how I ever got it—but it's—it's a crazy thing. I mean, I can go to shows and see people progressing and see people getting where they want to go and everything working out fine through consistent effort and everything like that—and yet I don't feel that I can see progress somehow or other.

C81. [RESTATEMENT OF CONTENT] In yourself.

S81. [AGREEMENT] That's right. (*Very long pause.*) [ASKING FOR INFORMATION—AMBIVALENT TOWARD SELF] The point is, if I did not think so much about my troubles, or myself, or what I think are my troubles, and I did other things and I set my mind on other things, does it actually change your attitude toward things that count? Do you know what I mean?

C82. [CLARIFICATION OF FEELING] That is, you're wondering if you—picked some goal like a job or something that you could definitely work on, would that really change any of your basic thinking or would it just be a temporary distraction, kind of?

S82. [AGREEMENT] That's right. [INSIGHT] In other words, if I ever stopped thinking about—the things that are bothering me—[PROBLEM—NEGATIVE ATTITUDE TOWARD SELF] somehow or other I still don't think that just by not thinking about those things for a month or two months and trying to think about other things—still I don't feel as though it would have changed me much, basically.

C83. [CLARIFICATION OF FEELING] You feel that just putting it to one side or shoving it out of mind for a little bit, that isn't quite the thing you are looking for or what would really help.

S83. [AGREEMENT] That's right. (*Pause.*) [INSIGHT] Well, actually I don't see how it could help if I was just going back to think the same things over again. (*Pause.*) So I suppose you just have to change your ideas—for better, I guess—I mean if something tells you one thing and then you say "no" you've got to think about it his way. [ASKING FOR INFORMATION] Does that actually help, attacking each idea as it comes to you, I mean each thought about something?

C84. [CLARIFICATION OF FEELING] At least you are wondering whether you could really tackle what you feel is wrong with your ideas as well as what you do.

S84. [MISCELLANEOUS] (*Statement unintelligible.*)

C85. [CLARIFICATION OF FEELING] You feel it must really be a petty way of thinking about the whole situation that distorts your thinking about others and their attitudes toward you.

S85. [AGREEMENT] That's right. (*Long pause.*) [ASKING FOR INFORMATION] And then the next step is (*laughs*) what am I going to do about all this?

C86. [CLARIFICATION OF FEELING] You feel that that might be another forward march, hmmm?

S86. [AGREEMENT] Yes. [PROBLEM—NEGATIVE ATTITUDE TOWARD OTHERS] But the funny thing is that when we—when you do that then somebody will do you a dirty trick—you lose faith all over again—I mean it just doesn't seem to jibe, you think it a—well, most things just seem right and then they'll do you a dirty trick—and a—and you don't seem as though you're justified in thinking about them that way.

Below are listed a series of statements of the same patient during the fifth interview. The statements of the counselor have been left blank so as to provide the opportunity for practice. Rogers's own responses as they appear in Snyder's (1947, pp. 171–176) *Case book* may be found at the end of this chapter.

S124. Hello again.
C124. ——
S125. I don't know what. Every time I come I think I don't know what to talk about. I just come. (*Pause.*) The point is that I come and I talk but it doesn't seem to make too much of an impression on me, I mean, while I'm here I feel better. Then when I go away I just don't seem to be able to hold on to it.
C125. ——
S126. Yes, what I mean is, I can see things clearly for the moment while I'm here but then I go home—I don't think any differently about things. That's what the funny part is, I'm sure of it—I don't.
C126. ——
S127. That's right. Well, I've gone out a little bit more than I had been going out—that is—visiting more—and I've been with people more, but I still basically feel the same. I mean, it doesn't seem to make too much difference whether I am with them or not. Well, maybe I sort of shrink back from being with them and then I stay off and I sort of feel guilty about that. And then when I do go out and mix with them, I guess I don't have the feeling that I'm lost somewhere by myself. But it still doesn't seem to help too much.
C127. ——
S128. Yes, m-hm. (*Pause.*) I enjoy listening to people, I mean, I—uh—it really is wonderful. I was over to my sister's house and they had some people over, and they talked about some very interesting things. And it was stimulating while I listened to it, it was lovely. I tried to see that they saw things from an impersonal viewpoint. They were perfectly normal people and yet it didn't help me—I tried to get it to help me—and yet it didn't really.
C128. ——
S129. That's right. I can appreciate that there were different people there that I thought were really very charming, and I could appreciate them all right. But somehow it didn't add anything—to things the way I thought of them. When I went home I told Mother that it was very nice and that I enjoyed it, but I didn't feel as though I contributed very much. And she told me that it was all right just to be there and just to be a good listener. There have to be people to listen and people to talk, too, so here's a good listener. But that, uh—that isn't satisfactory because I see what's behind it. Maybe *they* can't, but I know what's behind it.
C129. ——
S130. That's it exactly. M-hm. Because I didn't feel as though I was contributing. (*Pause.*) In other words, I don't want to just feel what people think about me is all right, I want to know that it's justified and I don't seem to be able to find a justification. Do you see what I mean?

C130. ——

S131. That's right. (*Pause.*) But I constantly have that feeling that I don't. That's just it. And yet it isn't just the feeling—it's almost a certainty—more or less, I mean. It's just a dead certainty, that's all.

C131. ——

S132. That's right. (*Long pause.*) Sometimes I wonder whether this is quite the right track. I don't know. I mean I realize that this has been going on a long time and that I can't expect to effect a change right away, because it has been such a long time. But I just wonder whether—I mean—my reactions don't seem to be very much better—on the face of it. I can't really tell, I guess, maybe you can tell a little better. But, uh—

C132. ——

S133. Yes, that's true. The only thing is that I can't help but I feel that I work against myself. I mean it's just so obvious to me that I *do* work against myself. And it seems rather silly to be one minute trying to do something about it, and then it seems so certain that there's something present that doesn't want to do anything about it. (*Pause.*) It's such a contrary thing—the whole problem is just—

C133. ——

S134. That's right. (*Pause.*) The whole thing is that somehow or other along the trail I lost fortitude—I know I did, because I just—I don't feel it. If somebody else might say, "Oh, well, cheer up, just look at it from another angle"—I just—it's just like a big balloon that's just deflated.

C134. ——

S135. That's right. M-hm. I mean if somebody said something or did something, or some circumstance presented itself and it wasn't favorable, instead of, well, bolstering myself I just thought, "Well, everything's all wrong, and I can't do anything about it." And that was just a big accumulation, I mean, that's the way I always look at things, I guess. (*Pause.*) Instead of fighting against things the way I should have.

C135. ——

S136. Yes, that's right. If I did do it, I still wouldn't be sure—the point—I really can't understand. (*Laughs.*) I mean just taking it and doing something about it—I still think, well, maybe I'm not doing the right thing. I still wouldn't be sure that it is the right thing to do (*Pause.*) It becomes a sort of an obsession or something.

C136. ——

S137. M-hm. That's right. Well, actually when you put it that way, and when I talk about it, if somebody else heard about it they'd say, "Well, what's the difference, why not do it? What the heck! What are you losing?" See, that's just it. I can't—I just don't seem to be able to

take that attitude. Everything is so serious. I don't know why it should be but it is.

C137. ——

S138. M-hm. I think it's because I'm always testing myself, I mean, in my own eyes. Everything is always a test for myself, and it shouldn't be. (*Pause.*) It's really such a funny attitude that I can't imagine how it ever came to be. Why I should always have to be testing myself. Actually, it's so childish that it's silly.

C138. ——

S139. That's right. It's just as though nothing else has gone before, as though each situation is just like I have to prove something, completely, I mean it—

C139. ——

S140. Yes, that's right. M-hm.

C140. ——

S141. It isn't that I—well, maybe I just feel that I have to. I always feel that way though—I mean, if I meet somebody, I feel as though I just have to prove something to them. It's crazy, but that's the way I feel. (*Pause.*) And that, of course, is not a normal attitude, and they feel it, I guess. They must.

C141. ——

S142. That's right. (*Pause.*) The thing is that most people, if they set about doing something—they say, well, if I do it, O.K. Then I prove something to myself that I can do it and then I can go on from there, but the point was when I did something like that and maybe I did do it right, I still had doubts about it. I thought, well, "No, I probably didn't"—you see, that's always just it—there was always another part that always wanted to sabotage, as you said.

C142. ——

S143. Well, I—maybe I felt it on top, but then there would be doubts about it, and then I would really begin to wonder.

C143. ——

GROUP THERAPY

Because human beings live in groups and most of their satisfactions and dissatisfactions develop out of the features of group living, therapy must take into consideration the orientation of the individual to the group. Since a part of the patient's difficulty is his inability to behave toward other people in an emotionally satisfactory manner, it is clear that the group may be used as a therapeutic unit through which patients may be reeducated in the techniques of group emotional interchange. In addition, lack of time and a shortage of therapists have made desirable some attention to techniques usable with a

group. As a result, a number of therapists working independently have developed methods of treatment now referred to as group therapy. In many situations where large numbers of emotionally disturbed patients exceeded the facilities for individual treatment, these methods have been applied with considerable success. In group therapy the aim is to provide the patients with an opportunity to discuss their problems together in an atmosphere free from constraint. Once the self-consciousness has been overcome, the patients find it possible to relieve their feelings of isolation and rejection. Exposure to the problems and experiences of others has been helpful in modifying a too strict conscience, in developing a sense of acceptance, and in gaining more satisfactory and normal interpersonal relationships.

The more usual type of group therapy meeting lasts for about an hour and is guided by an astute therapist who attempts, in so far as possible, to remain in the background and thus provide for a free flow of interpersonal relationships between the members of the group. As one patient discusses his problems or symptoms, others offer their points of view, interposing some of their own experiences. This leads to a discussion of the meaning of the symptoms and criticism of each other's attitudes. The therapist may, at times, have to enter the discussion to clarify and summarize some of the important issues. He may also have to draw out some of those who are not actively participating, and he may at times raise important issues that have not been brought forward spontaneously. Some members of the group will receive greater benefits than others, but most will develop the ability to become increasingly more objective in their appraisal and understanding of emotional problems. The mere recognition of the fact that one's problems are not unique, that one's abilities and resources compare favorably with those of others, is beneficial, and the opportunity to view attitudes from a variety of perspectives offers many advantages. The method has an advantage over individual therapy since the modifications of behavior take place in a situation resembling the social environment to which the patient must eventually adjust.

The group method has been considered important primarily because of the economy of therapeutic time, but it should be recognized that it has some important values of its own that are difficult to obtain in individual therapy. One of these values is the kind of support that may be provided. In individual therapy some patients find it difficult to accept the therapist's support and find dependence intolerable. Others accept the support much too readily and react unfavorably to any possible withdrawal. In the group situation the problems related to dependence upon the therapist are greatly reduced. The members of the group support and depend upon each other, and there is no obligation to any single person.

Of perhaps even greater importance is the opportunity that the group method provides for reality testing. In many instances the individual therapeutic situation is somewhat unreal and artificial. The patient experiences

emotional expression but is left uncertain as to how others will react to him. The group method provides him with this opportunity. The members of the group are representative of various types of people. Some of these people will have special meanings for each patient. Feelings tend to be expressed more honestly and directly, and all members of the group have an opportunity to express themselves in a social situation that has all the characteristics of reality. While it is true that one can talk about all emotional experiences in individual therapy, what is missing is the opportunity to experience the effect of these verbalizations on others and, more particularly, to be further stimulated by others.

Actually the fact that patients within the hospital frequently helped each other was well recognized before any formal development of group therapy. What must not pass unnoticed is the fact that the group situation may be traumatic as well as helpful. The astute therapist must know when to intervene not only to provide necessary guidance and understanding but also to prevent unnecessary and harmful trauma. He must also be careful not to take the situation over and kill the spontaneity of the group. Frank and Ascher (1951) have recently discussed the corrective emotional experiences that may take place in group therapy and have pointed out that intellectual understanding and repeated emotional acting out alone may not be sufficient to lead to behavior change. It may be essential that such experiences take place in situations that provide for a greater degree of reality experience.

In general, then, the group method may be seen as one designed to enable the participants to give vent to aggression, reinforce the ego, and obtain substitute gratifications. Tensions and anxieties may be reduced as one acts out his difficulties within the boundaries of personal safety. The interpersonal situations which develop spontaneously provide the opportunity for all kinds of social experiences. In the free interchange the participants discover limitations, build ego strength, develop insight, and as a consequence experience a more healthy emotional growth. For those who find difficulty in expressing their feelings, the group method serves the purpose of encouraging expression under favorable circumstances. On the other hand, self-restraint may be built in those who have gotten into difficulty by too free and impulsive expression.

The group-therapy method has been most successful when it has been possible to supplement it with some individual therapy. Success has also been obtained when the method was combined with other therapeutic techniques. Solomon and Fentress (1947) have reported success in group therapy in combination with dramatization. Material, developed in part through autobiographies, was dramatized in a group-therapy situation, and patients so treated improved rapidly.

Schilder (1938) also had excellent success with group therapy using the autobiography as a way of getting the patient started. Each patient was given instruction in how to use free association in writing an autobiography. Small

groups who had written such autobiographies were then assembled to read and discuss the material. Schilder believed that the method provided the patient with the opportunity to learn much about the dynamics of behavior and to discover the fact that isolation from the group offers no solution to the problem. The method was described as being useful in gaining better understanding and cooperation among the patients. Gratifying results were obtained with obsessional and anxiety patients, but little success was obtained with hysterias.

Group therapy is particularly promising in the treatment of problems of childhood. The child is still in the process of formulating his attitudes and is more likely to be influenced by group action than are most adults. The personality of the child is constantly being modified by the dynamic interaction among individuals comprising the group. Consequently, a group that is carefully organized and guided by a competent therapist may provide the opportunity for healthy learning or reeducation. In dealing with childhood problems, the group therapy is closely related to play therapy. Although play, or release therapy, is more frequently started in a situation in which the child is alone with the therapist, group play situations are often utilized. In group therapy with children both group interaction and play activities are important therapeutic devices.

The degree of direction, as well as the degree of restraint operative in group therapy with children, varies according to the point of view of the therapist and the problems presented by the children in the group, but the use of nondirective therapy is most frequent. The first step in the child's reconstruction is the establishment of a satisfactory relationship with an adult who is both positive and permissive. The situation must be one which will enable the child to feel that he is fully accepted regardless of his shortcomings. He needs to be relieved of the tensions accompanying the feelings of rejection and consequently must be in an environment that is free of censorship, nagging, disapproval, and punishment. If this kind of environment cannot be established, the child will identify the therapist with other repressive adults. The child must, therefore, be allowed for a time to show destructiveness, hostility, and aggression without being restrained or rejected. In the properly managed group situation, however, the period of rather complete unrestraint should be relatively short. The hostility, aggressiveness, and destructiveness are gradually diminished, since the child is not constantly under pressure to conform to a particular pattern. As the child's capacity for withstanding frustration increases, the therapist must arrange the group situation so as to enable his patient to learn that some restraint is necessary in group living. Both active and passive restraint are, therefore, gradually applied as the child becomes more comfortable and secure with the group. The task is obviously not a simple one and requires expert management for success.

Not all children respond satisfactorily to the method, and it is difficult to find agreement regarding the types of problems most successfully handled. Slavson (1943) has stated that the group method is designed for those children who have been directly or indirectly rejected. Direct rejection by repressive parents or environmental groups frequently results in the development of unhealthy aggression and hostility, while those children who are pampered and coddled develop personality traits that result in their being indirectly rejected. Such children are not likely to have adequate social contacts, and for them the properly managed group situations may be most beneficial.

PSYCHODRAMA

The drama, like music, has been associated with mental healing since ancient times. In most instances, however, the drama has been considered as a therapeutic aid rather than as a special therapy in its own right. Most mental hospitals provide the patients with the opportunity to participate in dramatics as a part of the occupation and recreational program. Some therapists have recognized the possibility of dealing with certain of their patients' problems through the drama and have prescribed specific dramatic experiences for them in such a way as to make the drama a real and effective part of the therapeutic situation.

More recently Moreno (1947) has developed a technique called psychodrama which he believes has specific advantages over other types of therapy. The classical method of Moreno is based upon a fairly elaborate superstructure and is related to various other therapeutic ideas. Many early philosophers noted the therapeutic values of the drama, and there is evidence that in the ancient theater plays were sometimes produced for their therapeutic effect. Moreno was influenced by this fact and by philosophical statements such as Aristotle's, "The task of the tragedy is to produce through the exercise of fear and pity liberation from such emotions." It is true that Aristotle referred to the effect on the spectator, rather than the actor. While Moreno has given attention to the effect on the spectator, his major and original emphasis was upon the effect produced on the actor or the one who suffered from the tragedy. The development and acceptance of the psychoanalytic theory undoubtedly also had great influence on Moreno. The terminology used in describing his theory is essentially analytic, as is the development of the superstructure of his method. It will be noted also that the psychodrama both influences and has been influenced by group therapy and play or release therapy.

Moreno has taken the position that most therapeutic situations are in part ineffective because the patient is treated in isolation and is limited to describing with words how he feels. He does not have the chance to act out the roles and situations of his life. In the psychodrama, on the other hand, the patient

is asked to come upon the stage and portray his private world. The superficiality of the ordinary therapeutic situation is done away with by allowing the patient to use gestures and movements, to go through all the actions of his past or imagined experiences, and thus to experience a more complete reliving of the events. Since the patient enacts dramatic scenes of his own devising, the method has advantages over the dramatic portrayal of roles created by an author. Thus there is no necessity to sacrifice his own private world to a role imposed upon him by an author.

The therapy usually begins by having the patient act out situations that are a part of his daily life. The scenes selected may be real situations or fantasies. No limitations are imposed upon him, and he is encouraged to act freely and spontaneously. The psychodrama may be arranged progressively into three phases or periods referred to as periods of realization, replacement, and clarification. In the first period the patient may enact his fantasies on the stage; in the second period real persons take the place of those previously imagined by the patient; in the third period clarification is attempted. The director of the drama acts as producer, therapist, and social analyst and is assisted by a staff of therapeutic actors who portray the roles required by the patient's world and thus guide the therapy. The staff of therapeutic actors are, then, extensions of both the therapist and the patient. They aid the patient in getting started on the drama and play the roles of all the persons near him or his problem.

The patient may be required to act not only the situations he has met in life but also those he has feared or evaded. In the course of the therapy he will at one time portray himself, but at other times he may take the role of his father, mother, or wife while someone else represents him in the drama. As the therapy develops, it may become evident that the patient avoids certain scenes or roles that are unpleasant to him. It may then be necessary to direct him with regard to the roles and scenes that he should act, since it is important that he live through the scenes that are painful and undesirable.

Moreno has attempted also to get at the deeper levels of the patient's interpersonal world. He has recognized the fact that the insight which one person has about what goes on in another's mind is most incomplete. Our intercommunications are sketchy, since we live simultaneously in different worlds. If the actor in the psychodrama merely speaks his lines as in the ordinary drama, the real communication is lost and the deeper layers are not revealed. Moreno therefore introduced the technique of the soliloquy. In the soliloquy the actors not only reenact the scene as it happened but also act out the feelings and thoughts which they had at the time but did not express. These they speak out in a lower voice—in soliloquy. The psychodrama thus provides for an expressive catharsis and obtains the kind of values for which release therapy has striven. It also provides some opportunity for free association and the possibility of uncovering important dynamic factors. The

therapy is not, however, completely dependent upon these values but provides for a constant analysis of the patient's problems. After the performance the situations that have been acted out are analyzed and explained to the patient.

The psychodrama may be carried on with or without an audience. In some instances the audience may be used as an aid to the patient by being allowed some participation in the drama. In other instances the audience may be the object of the therapy and be aided by the drama as they see some of their own problems dramatized or as they participate to some extent in the drama. Important relationships may, therefore, be seen to exist between group therapy and the psychodrama.

The classical method of the psychodrama as presented by Moreno requires not only an astute chief therapist but a carefully trained staff of assistants upon whose competence much of the success of the therapy must depend. Even under the most favorable circumstances it must be recognized that many patients cannot be persuaded to participate in such a dramatic procedure.

Some of the most interesting results have been obtained through the use of variations of the classical technique. The method has been useful as a means of allowing fantasy and trial and error to operate in the individual's attempt to gain understanding. Mental hygienists have noted important preventive possibilities in the use of the drama, and therapists have found the method efficacious in dealing with particular life situations, especially in preparing the institutionalized patient for experiences that he must face when he leaves the hospital.

One of the most interesting of such applications of the technique is reported by Herriott (1941). The patient who is preparing to leave the mental hospital frequently has great concern about meeting people on the outside. A variety of types of situations are viewed with apprehension. The necessity of explaining his period of absence to school authorities, classmates, and friends, the attitude to take when the topic of mental illness is introduced in general conversation, or the problems related to applications for employment or further education, all constitute real problems for the patient. While ways of dealing with these problems may be talked out in the therapeutic situation, Herriott has visualized the possibility of more effective treatment of such situations through the use of psychodrama. The problem was attacked by having the patient participate in dramatic scenes in drugstores, grocery stores, small-town post offices, and employment agencies. Action in these scenes was at first general, but eventually some possible traumatic situation was introduced. This might be accomplished by having one of the actors inquire about the patient's whereabouts since a certain date or by making it necessary for the patient to answer certain questions regarding his past. Both in the acting out of the scenes and in discussions following the drama,

personal fears that needed to be explored were revealed. These revelations provided the basis for further construction of the dramatic situations to be employed.

One of the most interesting and effective techniques developed was that of reversal of roles in the dramatic scene. In the employment situation the patient took the role of the employer and a staff member (with instructions to parallel the patient's history) took the role of the applicant for a position. It was discovered that under these circumstances it was possible to get a more complete picture of the patient's attitude to his own illness than when he dramatized himself. At the same time the playing of the role of the employer enabled the patient to appreciate some of the employer's responsibilities and in general increased his security and understanding of the whole situation. In the same way a variety of possible traumatic situations were approached through the drama, and progressive dramatizations were arranged so as to give the patient experience in the situations and a means of developing satisfactory ways of dealing with difficult problems.

THERAPIST'S RESPONSES [1]

C124. What's what today?

C125. You feel you make certain progress in an interview but after that it kind of slips.

C126. You feel that it doesn't quite carry over to life in between times.

C127. As I get that, you've done some things about it, I mean like trying to mingle a little bit more with people, but it still leaves something to be desired.[2]

C128. You've enjoyed getting more of an understanding of other people, and even tried to apply some of that understanding to you, but without much effect.

C129. Your mother tries to assure you that you are doing all right, but I take it that you feel that if you were really just being a good listener that would be one thing but actually the motivation behind listening is a little bit different.

C130. I'm not sure, let me see if I do. That you want to really deserve inside some of the approval, etc., you might get from other people. Is that, uh— [3]

[1] For patients' statements see pp. 398–400.

[2] C127, C128. The counselor recognizes the first tentative steps in the direction of the client's planning and taking action directed toward improving her situation, but also accepts her ambivalence about that progress.

[3] C130. The counselor's gesture of tentativeness of response is probably a useful technique, at times, when the client may be expressing a feeling which may be somewhat hard for her to face too rapidly.

C131. There's plenty of proof that you don't deserve approval. Is that it?

C132. At any rate, you can't help but feel a little bit disappointed, perhaps, in the lack of obvious change in you, even though, on the other hand, you realize that it probably is somewhat likely to be a slow process since the problem has been present for a long time.

C133. So that the very time that one part of you is perhaps really taking hold of this whole situation, another part of you is just sabotaging the whole business.

C134. You realize that the courage that people normally need to meet life you just feel in yourself has been all deflated.

C135. You experienced a long series of defeats and the notion of taking the offensive is pretty difficult.

C136. No matter what you might strive to undertake you still feel as though it's a very risky gamble.

C137. You realize you really might take more of a gambling attitude but you just find it necessary to take the possibility of loss very, very seriously.

C138. You feel that every experience is something you must measure up to.

C139. You have to start from scratch.

C140. You don't have any accumulated savings that you can bring along with you, but you must absolutely start fresh with each experience to prove it.

C141. The necessity of proving something about yourself is always there.

C142. In other words, in a sense, even when an experience does prove something about yourself, still you can't accept the proof. That is, you might do something well and you would have reason to say, "Well, I did a good job on that," but you can't even feel that way.

C143. Any acceptance of it would be just a surface acceptance.

CHAPTER 14

PHYSICAL AND CHEMICAL THERAPIES

In the last several chapters attention has been directed to treatment by psychological methods or psychotherapy. In view of the imperfect understanding of the etiology of the disorders, the therapies are lacking in specificity. Further developments in methods of treatment are dependent upon better understanding of the causes of the pathological symptoms. The patients manifest disturbances of psychobiological integration, the range of the symptom patterns being so broad as to be almost all-inclusive. We encounter disturbances of thought such as loss of memory, defects in concentration and attention, confusion, confabulation, and delusion. Disturbances of the affect or emotions are noted in excitements, depressions, and apathies. Pathological signs are also evidenced in sensory and motor responses and in a wide variety of the chemical and physical processes of the organism. The patient may also show an inability to meet the demands of the environment by manifesting defects in interpersonal relationships and a pathological handling of the ordinary problems of living. If we had a complete understanding of the underlying etiology of each of these pathological symptoms, we might have developed a series of specific treatments. No such complete understanding has been developed. It is possible that many of the abnormal behavior manifestations are due directly to failures at lower integrative levels or that defects at one level may be balanced or compensated somewhat by creating defects at some other level. Thus the possibility of correcting defects at every integrative level must be studied. While emphasis is placed upon the treatment of the organism as a whole, it must be remembered that satisfactory psychobiological integration may have to wait upon the correction of defects at lower integrative levels. The discoveries that have been emphasized by psychosomatic medicine would indicate that certain physical symptoms disappear when satisfactory psychological adjustments have been made but also that the treatment of certain physical and chemical difficulties may result in a return to satisfactory psychological adjustments.

Despite the fact that the clinical psychologist will be concerned chiefly with psychological causes and treatments, the relationship of the mental reactions to structural and physiological changes demands that attention be given to the latter factors. No attempt will be made here to describe completely the various medical-psychiatric measures used in the treatment of

psychiatric disorders. However, a brief description of the more important physical and chemical therapies will be presented. Attention will be directed primarily to shock therapy, sleep therapy, and psychosurgery.

SHOCK THERAPY

The history of medical psychology records many attempts to treat mental disorders by somatic procedures, and among these efforts were some that depended upon shock. It is only comparatively recently, however, that shock therapy has become well organized and given a prominent place in the treatment of a great variety of mental disorders.

Metrazol. In 1928 Meduna (1935) presented the opinion that patients who had convulsions seldom developed schizophrenic symptoms and that those schizophrenics who had convulsions tended to recover. Although this opinion had not been substantiated, Meduna began convulsive treatment of schizophrenia using intramuscular injections of camphor in oil to induce the seizure. Camphor, however, was not satisfactory as a convulsion-inducing agent because of its slow absorption and the unpredictability as to time of seizure; consequently Meduna turned to Metrazol, which can be given intravenously and will produce seizures immediately and with great reliability. Before the treatment can proceed, the patient must have a complete physical examination and routine guards must be set up to prevent injury. Dental plates, glasses, and constricting bands such as belts and collars must be removed. Since there is danger of fractures and dislocations, the patient is usually placed in a bed which has a flat wooden board under the mattress to keep the mattress firm, and a stiff blanket roll is usually placed between the board and the mattress to support the patient's mid-thoracic spine. Since the convulsion is frequently extreme, it is necessary to station attendants at each side of the bed to apply pressure to the patient's shoulders and hips and thus to keep them firmly in place. Breakfast is omitted on the day of the treatment. The initial dosage usually consists of 3 to 5 cc. of a 10 per cent aqueous solution of Metrazol given intravenously.

A convulsion follows the injection almost immediately and lasts about 30 seconds to a minute. Should a convulsion not occur within a minute, the dosage is increased until the convulsion is produced. The convulsion closely resembles the seizure of grand mal epilepsy. There is usually a yawn, followed by twitching of the eyelids and then almost immediately a marked spasm of all the body muscles. This is usually followed by clonic twitchings of the extremities. The pupils are dilated and do not react to light. Following the convulsion the patient is restless and confused and fearful about being left alone. In a large number of patients there is terror, which has been one of the most serious effects of the treatment. Most patients, however, fall

asleep within a half hour after the convulsion and upon awakening complain of headache, dizziness, nausea, and fatigue. Some request food and are given something light, such as fruit juices. They are kept in bed under constant supervision for 4 to 6 hours, after which they may be given a regular meal. There is no general agreement regarding the number or frequency of convulsions to be prescribed in the treatment. Meduna and many of his followers recommended inducing the convulsions at least twice a week and in some cases every other day. Others have tended to prescribe no regular sequence and have preferred to say that the frequency of the convulsions should depend upon the mental condition of the patient. The number of convulsions prescribed has also varied considerably, fewer being prescribed for depressed patients than for schizophrenics. The general range is between 5 and 30 seizures with an average of about 18 to 20, but the reports of Winkelman (1938), Brousseau (1937), and Finkelman (1938) will serve to indicate the wide variability in practice.

A large number of patients treated by Metrazol show sudden, startling changes in behavior often after a few treatments. Some patients, however, show no real change until many injections have been given; and still others, especially those who have been ill for a long period of time and who show a tendency to a more passive and vegetative existence, do not respond to the treatment regardless of the number of injections.

Electro-shock. Cerletti and Bini (1938) reported on the treatment of psychotic patients by electrically induced convulsions. Both Metrazol and insulin had already gained popularity as so-called "shock" therapies. The electro-shock therapy is more easily compared with the Metrazol treatment, however, since both of these methods depended upon the production of convulsions and might therefore be considered as convulsive therapies. Electro-shock almost immediately became preferable to Metrazol, because with it complications and deaths are relatively rare, the patient seldom feels any discomfort, since he becomes unconscious almost immediately, and consequently the terror associated with Metrazol is seldom experienced.

The technique is simple and can be rather quickly developed. The preparation for treatment is similar to that for Metrazol. A complete physical examination should precede the treatment, and the guards necessary to ensure the safety of the patient are the same as those for Metrazol. Although a light breakfast is sometimes permitted, most therapists stress the fact that no food should be given the patient within 3 hours of the treatment. The treatment may be given on any firm surface, preferably on a bed on which a flat wooden board is placed under a firm, inelastic mattress. The treatment may be given by using one of several types of machines designed to produce electrical shock to the brain. Jessner and Ryan (1941, p. 110) describe the construction of the electrical apparatus used by them as follows:

It has a current source of a 60-cycle alternating low frequency type, with a flexibility and range of control from about 50 to 130 volts and from about 50 to 750 milliamperes. This current is further regulated by means of a variac and a special electronic timing-device, placed in the circuit for accuracy and safety. Special indicators on the panel are connected with pilot lights, which flash off and on when the current enters the machine and when it is flowing through to the patient. From two terminals on the panel there pass two wires, which are attached by means of insulated clips to the patient's contact electrodes. These metal, nonpolarizable contact electrodes are circular in shape and about 5 cm. in diameter. A rubber, self-adjustable headband keeps them in contact with the patient's head in the temporal regions. Before application of these moistened electrodes, the resistance of the skin, a very important factor, is reduced by rubbing paste containing 20 per cent sodium chloride over each temporal region.

The patient lies supine with moderate hyperextension of the middorsal spine. This position is best arranged by supporting the midthoracic spine using a firm pillow, blanket, or sandbag. When all arrangements for the patient's safety have been made, the shock is administered.

There is no general agreement on the dosage. The initial shock may vary from 50 to 100 volts for 1/10 of a second. Most therapists believe that it is desirable to produce a grand mal convulsion with a tonic as well as a clonic phase. If the dose is too small, the patient may not lose consciousness and may suffer severe discomfort. With the smaller dose, also, confusion after treatment is often more severe, and respiratory and cardiac complications are more likely to occur. On the other hand, a very large dose throws the patient immediately into a clonic fit, in which case the possibility of fractures is greatly increased. An effort is made, therefore, to give a dose that will produce a brief tonic phase which passes smoothly into a clonic phase. Thus the patient loses consciousness almost immediately and goes into a convulsion that lasts 30 seconds to a minute. As in the epileptic convulsion, there is usually a cry, the mouth opens, and there is a generalized tonic contraction followed by the clonic phase. The pupils are dilated, the eyeballs are turned up, and the face is cyanotic during the convulsion. The patient comes out of the convulsion drowsy and confused, and there is amnesia for the event. Turned on one side with the head in a position to promote postural drainage, he is allowed to recuperate in bed. He should not be moved about unnecessarily, since such movements tend to promote motor excitement.

In some instances the patient does not lose consciousness or go into a convulsion when the shock is administered. It may then be necessary to increase the voltage. It is necessary to have in the treatment room facilities for the intravenous and intracardiac injection of adrenalin in the event of circulatory

collapse or cardiac arrest. Respiration can be stimulated by turning the patient's head to one side or by artificial respiration. Postural drainage will relieve the respiratory difficulties caused by the accumulation of mucus and saliva, and a molded rubber airway is used if undue relaxation of the tongue causes respiratory obstruction. In some cases violent muscular contractions are prevented by the use of curare. Should the curare be used, it is necessary to have the antidote, prostigmin, ready for immediate injection.

There is no general agreement on the length of the course or the spacing of the treatments. Most frequently the treatments are given two to three times a week for a period of 3 weeks. The spacing of the treatment over a 3-week period permits time for active psychotherapy during the shock treatment. Some therapists, however, prefer daily shocks for 3 to 6 days followed by a short rest period and a repetition of the series if necessary.

The recovery or improvement of patients treated by convulsive therapy is extremely difficult to evaluate, and statistics are available for the support of almost any claim. In general, however, it appears that the best results have been obtained in the treatment of affective disorders, particularly those complicated by intense resentment. The involutional melancholias may, therefore, be expected to respond best to the treatment. Paranoid projections and systematizations associated with affective features also yield to convulsive therapy. Anxiety neuroses, hysterical and compulsive reactions have not responded well to the treatment. Metrazol has been generally superseded by electro-shock, and the latter is more the method of choice as a convulsive therapy.

Insulin. Dussik and Sakel (1936) reported on the use of insulin shock in the treatment of schizophrenic patients. The development of the therapy had evolved from observations by Sakel that accidental insulin shock in drug addicts resulted in the disappearance of schizophrenic-like symptoms. Actually insulin therapy got started in America before the other forms of shock therapy. The method was enthusiastically received and then was for a period of time superseded by Metrazol. Each of the shock therapies has had its day of popularity, but at present Metrazol is not used so frequently as either insulin or electro-shock.

The objective of the insulin therapy is the induction of coma by the reduction of the sugar content of the blood. This is accomplished by giving the patient sufficient doses of insulin intramuscularly. As with other forms of shock therapy, there is no complete agreement with regard to dosage. The greatest difference of opinion exists between those who believe that the best results are obtained by producing a prolonged coma and those who believe that the subcomatose level is most efficacious in the treatment of the greater number of patients. In other words, in some treatments the hypoglycemic coma is avoided, and in other treatments the coma is produced purposely and maintained for a definite period of time.

In either case the preparatory measures and safety precautions are essentially the same. As with other forms of shock therapy, a complete physical examination and laboratory tests should precede the treatment It is desirable to begin the treatment early in the morning and omit breakfast. The beginning dosage varies anywhere from 10 to 25 units of insulin and is ordinarily increased by 10 units daily. The amount of insulin given will depend upon the condition and reaction of the patient and upon the degree of shock desired by the therapist. If the subcomatose state is desired, the dosage is increased only to that necessary to induce in the patient a prolonged hypoglycemic reaction of drowsiness or sleep which is terminated after 1 to 2 hours. The occurrence of convulsions or marked excitement is an indication for earlier termination.

If the coma is desired, the same procedure may be followed; but after the first signs of hypoglycemia appear, the dosage is increased daily until the coma is induced. The coma does not occur for several days after the initial treatment, and when it does occur it is usually 3 to 4 hours after the insulin has been administered. When the coma has been obtained, the dose of insulin is seldom increased; in some instances it is decreased. An effort is now made to determine the lowest amount of insulin necessary to maintain the coma. The length of the coma may then be increased gradually from a minimum of 15 minutes to the maximum duration that may be reached without danger. The shock is terminated by introducing sugar solution into the body. This may be accomplished by mouth, nasal tube, or vein. In most instances sugar solution is given orally in the form of fruit juices, but when the patient is unable to swallow, the solution may be given through a nasal tube. In the case of danger, glucose may be administered intravenously, and some therapists prefer to use this method of terminating the shock for most of their patients. If the sugar solution is given orally or by nasal tube, the patient may be expected to awaken within 10 to 30 minutes, but if the glucose is administered intravenously, he is likely to awaken in 3 to 5 minutes. The patient should remain in bed until he has completely recovered. He is then given a shower and fed a meal rich in carbohydrates. Glucose is kept available for treatment if the patient should suffer a delayed hypoglycemic reaction, and careful attention is given to the intake of food for the rest of the day.

Treatments by insulin usually take 2 to 3 months. As a rule, treatments are given 5 days a week and are continued for varying lengths of time. They are seldom terminated until at least 15 shocks have been applied. The full course of treatments is arbitrarily assumed to be 50, at which time if no improvement has been shown, it is unlikely that the patient will receive benefit from further treatments. In some instances patients who have shown some improvement are given a second course of treatments after a lapse of 3 to 4 months.

Effectiveness of Shock Therapy. The effectiveness of shock therapy is difficult to evaluate in view of the large number of conflicting reports. The early claims for improvement and recovery, particularly in schizophrenic patients, were very expansive. Some later reports tended to support the early claims, while others were rather discouraging. While Impastato and Almansi (1941) reported great success with cases treated early, the results of Williams *et al.* (1939), Bowman *et al.* (1939), Halpern (1940), and Colomb and Wadsworth (1941) have not substantiated the early claims. Androp (1941) even stated that the cures previously reported could not be attained through any form of shock therapy. Interesting results in treated cases in comparison with selected controls have been reported by Miller (1939), Niver, Weisz, and Harris (1939), and Craig and Schilling (1941). Some of these show a slight advantage for those patients treated by shock, while others show no gain whatever when the patients are exposed to the same procedures except for the omission of shock treatments. Those who have been enthusiastic about the shock treatment have pointed out, perhaps with justification, that the duration of hospital care is materially decreased in the treated cases.

In spite of the differences of opinion as well as the differences in experimental results, the number of patients treated by shock has continued to increase. The later studies are as confusing as the early ones, and it is still possible to get statistics to support almost any point of view. Feldman, Susselman, and Barrera (1947) reported that 66 per cent of schizophrenic patients treated with insulin coma were returned to their homes but that there was a high remission rate and many who did not return to the hospital continued to be social and economic problems at home. A number of investigators have presented results that are in basic agreement with this position. Thus Hinko and Lipschutz (1947) reported that a high percentage of paranoid and catatonic and a low percentage of hebephrenics were paroled after insulin therapy, but only 4 per cent more patients were still on parole 5 years after treatment than in a comparable untreated group. In contrast with this position, Finiefs (1948) reports that 35 per cent of schizophrenics remained well 5 years after shock therapy compared with 14 per cent of those not treated by shock.

The wide differences that exist in the reports of experimental studies make it impossible to state any satisfactory conclusions. There are, however, a few points on which there is a developing general agreement. The affective disorders, and particularly the late life depressions, appear to respond best to the convulsive therapies; and since electro-shock has certain obvious advantages over Metrazol, it is the therapy of choice for such disorders. The course of the involutional psychosis is usually long, and it appears evident that convulsive shock therapy, particularly electro-shock, will shorten the length of the illness. The involutional patients are generally at an age period when one could expect a slight falling off of intellectual efficiency; any slight

cortical damage sustained by the treatment will not be particularly handicapping. Paranoid projections and systematizations and aversion reactions which are connected with affective features have also responded well to convulsive therapy.

The best results in the use of insulin therapy have been obtained in acute conditions where there is marked anxiety. Panic reactions, catatonic and other schizophrenic excitements, and intense anxiety in the psychoneuroses have all responded well to insulin. There is rather general agreement that insulin is the preferred shock therapy for early schizophrenia. There is no satisfactory explanation for these therapeutic results, but there is a growing belief that symptoms, rather than psychiatric diagnoses, are the important considerations in deciding which therapy to use. Kalinowsky and Hoch (1946) and many others have described the advantages of combined insulin-convulsive therapy.

Theoretical Formulations. Satisfactory explanations for the results obtained by inducing comas and convulsions have not been forthcoming. It should be recognized that the history of medicine records many reports of the treatment of mental patients by methods similar to present-day shock therapy. All kinds of physical and chemical attacks have been used. History records the fact that patients were beaten, spun about until dizzy, or ducked into cold water in an effort to effect a cure or to make the patients more easily manageable. Treatments have included prolonged sleep, purges and emetics, bleeding, production of high fever, and a variety of other physical and chemical assaults. A good summary of these attempts is contained in the article by Menninger-Lerchenthal (1941). In general, it has been noted that patients frequently rise to biological emergencies with reintegration of the personality. Practically every clinician is able to recall situations in which the patient's recovery began with accidental shock.

The writer recalls several such startling recoveries. A young man of 28 had been in a catatonic stupor for almost 18 months. During most of this time he did not speak or make voluntary movements and had to be tube fed. Every Thursday afternoon he was taken for an automobile ride in a hospital car. The road out of the hospital grounds met directly a bad turn in a main and busy thoroughfare. One day the driver of the hospital car failed to see an approaching car, and as the two met the patient was thrown out. The patient's radial and ulna bones were fractured, and he was otherwise badly shaken up. The silence of 18 months was broken by a flow of profanity directed toward the ineptitude of the driver. He walked away from the scene and was taken back to the hospital where his injuries were cared for. All during this time he kept up a constant stream of talk giving good evidence of the fact that he had been well aware of what was going on about him during his catatonic episode. He began almost immediately to discuss his problems with his therapist, and in less than 2 months he left the hospital in what appeared to be excellent mental condition. He adjusted well to his

environment, and at the last check, 10 years after dismissal from the hospital, he had suffered no further mental difficulties.

An even less shocking experience served as the beginning point for another recovery. A female patient, aged 25, came to the hospital in a deep depression, and after 2 months all efforts on the part of the therapist to get into communication with the patient had failed. One day while the patient was being taken to another ward, she caught her shoe in the hem of her dress and fell to the bottom of a steep stairway. Although badly shaken up, she sustained no serious injuries. She became excited, however, and immediately began to talk. Her therapist found her ready to discuss her difficulties, and after 6 weeks of psychotherapy the depression had lifted, she had developed good insight, and was able to leave the hospital. Some 2 years later while traveling through the town in which the hospital was located, she stopped in to visit some of her friends at the hospital. While talking in the hall with one of the staff members, she noticed some patients about to descend the steep stairway, and turning to the therapist she said, "Why don't you push them down the steps?"

From the insufficient evidence that is available to us at present, it seems likely that those who recover after having been treated by shock therapy do so for a variety of reasons. Some theorists and clinicians believe that the recovery is the result of organic damage; some refer to the importance of the stimulating effect on the autonomic nervous system or to the fear that is generated in the patients. An indication of the types of explanations that have been offered by theorists has been presented by Dorcus and Shaffer (1950, pp. 544–547) as follows:

> Probably the most plausible theories of the way in which results are obtained by such methods consider the behavior changes to occur as a result of the organic damage to the brain. Particularly the memory defect (which is retrograde) is thought to blot out the acute awareness of the psychotic episode and the events leading up to it. The greatest defects occur in the field of recent memory so that shock given during the psychotic episode affects preoccupation with the material of the psychosis most profoundly. Some authors have discussed the problem in terms of the breaking of synapses or the selective destruction of the pathological cells that cause the disease, etc. Sakel's (1937) attempts to account for the changes were ingenious. Proceeding on the basis that psychological factors are not the only ones involved in schizophrenia, he assumes that there must be some injury to the deeper vital processes. He believes that the nerve cells are continuously exposed to a stimulating substance resembling adrenalin and that insulin is its antagonist. The stimulating hormone is seen as not only overstimulating the activity of the cell, but as also reviving forgotten phylogenetically ancient and infantile nerve

pathways and patterns. Thus, in the pathological states these infantile and primitive patterns are called into action. His success with insulin in the treatment of morphinists suggested the possibility of using a non-alkaloid to pacify the nerve cell in other excited states. Using moderate doses of insulin, he noted that certain mental changes took place which could not be entirely explained by a quantitative diminution of cellular function. It was further deduced that these changes must be related to the hypoglycemia. The assumption that insulin diminished the activity of the nerve cell might be sufficient explanation of the sedative effect on excited patients, but it did not explain the mental changes during and after the hypoglycemia. These changes were explained by a further assumption that the hypoglycemia blockades pathways which happen to be the most active at a given time so that reactions to the same stimuli would now come through pathways which had previously been inactive. The injury to the nerve cell by some disease processes is seen as first involving the youngest pathways, and the older pathways must be activated. Thus, a response may take place over a false pathway, in which case an olfactory stimulus might induce reactions along visual and acoustic pathways resulting in hallucinatory experiences. Actually, if the most recent pathways are disturbed, the hallucinations should be primarily olfactory, the oldest in the evolutionary scheme. In justice to Sakel, it must be noted that he admits the risk of becoming involved in mythology.

This type of explanation is supported to some extent by studies of the disintegrative effect of such treatments on learning habits. This has been done only with insulin, but can probably be safely assumed to show similar results with other forms of shock therapy. Riess and Berman (1944) found that the disintegrative effect of insulin shock is greatest in poorly fixed habits; those better learned are more fixed and are not destroyed so easily nor to such an extent.

The very interesting experiments of Gellhorn, Kessler and Minatoya (1942) and of Kessler and Gellhorn (1943) show the revival of inhibited conditioned responses without reinforcement in animals treated by insulin, metrazol, or electric shock, whereas control animals show continuous inhibition. This revival is maintained for several days and can be reinstituted by further shock treatments should the conditioned response again disappear. Its duration is contingent upon the number of treatments and (with insulin) the depth or duration of the coma. Since inhibition is obviously a cortical function, it would seem logical to draw the inference that the learned responses from the past, which are inhibited during psychotic episodes, can be brought back into operation by sufficient cortical destruction to relieve the inhibiting effect. This treats the cortex quantitatively rather than postulating the question-

able selective destruction of "pathological cells," "pathways," etc. It would lead us, however, to expect best results in the most regressed cases, which is not true, although the highly inhibited and rut-like behavior of involutional and depressive patients is quite regularly affected for the better.

Other authors have been much impressed by the stimulating effect of these therapies upon the autonomic nervous system (as was Sakel also). If one is willing to assume that the psychotic states are due to depression of either the sympathetic or parasympathetic systems, then studies such as those of Frostig (1940) and Parker (1940) would support the contention that the stimulating effect upon the autonomic system is all important, particularly since the latter has shown (with insulin at least) that when tone increases on one side of the system, it is not diminished on the other so that there tends to be a crescendo of stimulation of both, even though at one time or another either parasympathetic or sympathetic tone may predominate. Hence, the conclusion that if imbalance between them occurs, or one or the other is depressed, shock treatments will tend to correct the abnormal condition since it stimulates both.

Farrell and Vassaf (1940) noted that in improved cases the heart shadow increased and the circulation showed simultaneous improvement. After treatment, if the heart decreased in size, the patient relapsed. They attributed the favorable results to sympathetic stimulation.

Other authors such as Good (1940) have been willing to account for favorable results on the basis of the fear generated by the treatments. Glueck and Ackerman (1939) utilize a more holistic explanation. They believe that the shock therapies propel the patient's personality back in the direction of a primitive, relatively undifferentiated, biological state remotely comparable to that of the newborn child, or the child in utero. This gives impetus to the movement of opposite forces in the direction of redifferentiation of the personality which may carry with it a stronger tendency toward the normal than toward the pathological. This supplemented by the experience of shock treatment with its connotation of death and rebirth results in restorative trends.

It is still not possible to determine to what extent the patient's recovery is related to physico-chemical processes and to what extent it is related to psychodynamic and symbolic ones. Recently, Baeyer (1947) has elaborated the theory of reversible organic brain change induced by electric shock, while Flescher (1946) has suggested that the shock provides an outlet for unconscious tensions as a kind of discharge phenomenon. The difficulties involved in theoretical interpretations may well be understood by an examination of Gordon's (1948) collection of fifty theories.

It is evident that there is as yet no clearly understood theory that explains the satisfactory results. Understanding must probably wait for more basic knowledge of the anxieties and depressions as well as for basic studies of comas in the absence of insulin and convulsions, however produced.

Accident and Damage. In all the forms of shock therapy complications may arise as a result of accidental injury. The serious complications occur more frequently in insulin therapy and include, among others, prolonged coma, cardiac and circulatory disturbances, tuberculosis activation, lung abscesses, and cerebral vascular accidents. Deaths are extremely rare with any of the methods, the highest incidence being with insulin and the lowest with electro-shock. Fractures and dislocations take place more frequently in the convulsive therapy, particularly with Metrazol. During the seizure there may develop dislocations of the jaw, shoulder, or hip and fractures of the femur, humerus, and the spinal vertebrae. Such injuries are serious enough but do not usually threaten the life of the patient, and in most instances they heal without disability.

Every effort has been made to reduce the dangers of these therapies as well as to develop new procedures that have fewer dangers but do not affect the efficiency of the method. Bennett (1939) has suggested that spinal and lower extremity fractures may be prevented by spinal anesthesia. Schorvon and Schorvon (1943) and Palmer (1939), however, found the spinal anesthesia only partially successful and were of the opinion that it introduced new hazards. Bennett's (1941) introduction of the use of curare has been most beneficial in the prevention of injury. Otherwise the only other practical method has been that of postural control, and this has been essentially unreliable. Respiratory embarrassment following the convulsion may be relieved by artificial respiration. Care must be taken to see that the relaxed tongue and throat muscles do not occlude the air passage. The mucus of the throat may be removed by postural drainage. Ordinary respiratory stimulants must be available; and if curare is used, its antidote, prostigmin, must be available for immediate injection. Picrotoxin has been tried as a convulsant because of the absence of terror in its administration, but agreement is lacking with regard to its value. Dax (1940) has reported that, when ammonium chloride is used as a convulsant, the muscular movements following the injections are slight and the risk of fracture or dislocation is negligible. The results of the treatment, however, do not compare favorably with those of electro-shock or Metrazol. A variety of other attempts, both to find a better convulsant and to reduce the danger of the treatment, have been reported in the literature.

The likelihood that organic damage has taken place in patients treated by shock therapy is indicated by the theories that assume that such damage may account for the recovery. While there is no clear-cut understanding of

the damage, there are some fairly consistent findings. A large number of observers have reported that, during and immediately following shock therapy, the patients exhibit behavior that is characteristic of the organism's response to brain injury. Examples of such agreement may be found in the reports of Mayer-Gross (1943), Polatin, Strauss, and Altman (1949), Ziskind (1941), and Guerra (1942). Watkins, Stainbrook, and Lowenbach (1941) report one of the most striking experiments in which a permanent island of amnesia comparable to the result of head trauma is found in a normal subject after the administration of one subconvulsive electric shock. Further evidence of damage is indicated by electroencephalographic studies. These studies point out in general that organic-like changes in the cortical potentials appear following shock treatments. The studies of Pacella and Barrera (1942), Proctor and Goodwin (1943), Finley and Lesko (1941), and others present evidence that such changes persist for variable lengths of time and may possibly be permanent. Pathological studies of the brains of both animals and humans who have been subjected to shock treatment present evidence of organic changes in the neurones. In addition, there is considerable evidence that the shock therapy, particularly insulin, results in profound shifts in the autonomic-sympathetic balance of the organism. There is also considerable evidence that marked biochemical changes occur in all forms of shock treatment.

Many efforts have been made to determine the type and degree of organic damage by the use of psychological tests. As might be expected, the results of such investigations are confusing. One of the difficulties is that the tests are fairly gross, and the behavioral responses may not indicate the actual losses. Another source of difficulty is the inability to establish a satisfactory base line for such psychological measurements. The procedure of comparing tests administered before and after treatment suffers from the fact that the patients are already sick when the first test is administered, and consequently the test results are not fair measures of the patient's ability. As indicative of the confusion that exists, Harris *et al.* (1948) found no significant change on the Wechsler-Bellevue score for shocked patients, while Brooks (1947) reported that shocked patients showed improved mental efficiency as measured by the Wechsler-Bellevue and the Hunt-Minnesota tests. Carp (1948) repeated the Brooks experiment and interpreted the improved scores as practice effect on the test. In animal experimentation there are fairly consistent reports that electrically induced convulsions result in impairment of habit retention, habit performance, and learning ability.

In spite of the lack of agreement on the clinical tests, careful observation of the treated patients by both clinicians and relatives suggests that some permanent organic loss is incurred. More frequently the loss appears to be in attention and memory along with a flattening out or dulling of the personality and a triviality of interests.

Concluding Remarks. In the last several years the number of patients treated by shock has increased considerably. It appears evident that shock therapy has won a place in the treatment of late depressions, involutional melancholia, and anxiety and panic states. Many therapists, however, stress the fact that the shock therapy should always be offered in the setting of well-planned psychotherapy. It is possible that the recovery following shock therapy may be only symptomatic and that psychotherapy may be essential if the patient is to remain well. It is still not possible to state at what phase of the illness the shock therapy should be started. There is no real evidence to support the belief that depressions may be stopped by giving convulsive therapy at the earliest possible moment. A large number of depressed patients are still admitted to psychiatric hospitals after having received unsuccessful convulsive therapy. It is true that the best results are obtained in cases treated in the early stages of the illness, but psychiatric workers have realized for a long time that patients treated early by any therapeutic method have a better chance of recovery. Even the spontaneous-remission rate is good, and this may be raised greatly by intensive interest and psychotherapy.

The therapy is likely to be most used in large state hospitals where the staff is not adequate and planned psychotherapy is not possible for large numbers of patients. The enthusiastic reports of the effectiveness of the method in such institutions must be evaluated in the light of a number of circumstances. It must be recognized that a patient selected for such therapy becomes the object of attention, interest, and special care, all of which may play important roles in the eventual outcome. There is no question about the fact that the judicious use of shock therapy will change the picture on a ward in a large hospital in which there are many excited patients. Whenever possible it is advisable to observe first the results of psychotherapy, occupational therapy, and sedation. In brief excitements and panic reactions the prolonged shock treatment may thus be avoided. The place of shock therapy in the treatment of mental patients must wait upon the results of further study and experimentation.

PSYCHOSURGERY

The development of brain surgery has encouraged a number of clinicians to consider the possibility of its use in the treatment of mental disorders. The use of such measures is referred to as "psychosurgery." The method was introduced by Moniz (1936), who reported on the results of destructive operations on the frontal lobes of the brain. The operation was conceived on the basis of observation of behavior differences in monkeys subjected to brain operations. It was observed that those monkeys whose frontal lobes had been removed failed to develop agitation in situations that regularly produced agitation in animals that had not had the operation. Further observation

produced the idea that patients with lesions in the frontal lobe, or those who had had tumors of that area removed, showed less than the expected degree of worry and concern. The purpose of the operation, according to Moniz, was to destroy the rigid connection between the cells which he assumed to be responsible for the abnormal condition of the patient. Although the effectiveness of the lobotomy or leukotomy was early assumed to be due to the destruction of cortical tissue, the position gradually shifted to a belief that the real purpose should be the destruction of the neural connections between the frontal lobe and the thalamus.

The treatment was enthusiastically received in America by Freeman and Watts (1937), who had tried various procedures but had primarily attempted to sever the frontal thalamic tract without doing gross injury to the frontal lobe. This procedure is based on the assumption that the patient's abnormalities are due to the effect of the frontal lobe upon the thalamic region.

The therapy has undergone various modifications. Some techniques involve only the cutting of brain tissue, and in others brain tissue is removed. In addition to the prefrontal and frontal types, parietal, temporal, and transorbital lobotomies are performed.

The efficiency of the treatment is difficult to evaluate. Freeman (1941) has perhaps been most enthusiastic and has reported good results. Strecker, Palmer, and Grant (1942) report results on the conservative side, and others like Heilbrunn and Hletka (1943) are definitely disappointed with the technique. With our limited knowledge of the relationship of psychological functions to brain localization, it is difficult to evaluate properly the kinds of functions that might be improved by such surgery.

There are no satisfactory indications of syndromes that are most effectively treated by psychosurgery. A variety of kinds of disorders have been so treated, Freeman and Watts (1942) being most successful in the treatment of agitated depression and involutional melancholia. In general, the best results are reported with patients who suffer from strong emotional disorders leading to persistent attempts to harm themselves or others and those with long-standing unmanageable habit deterioration along with destructive affective factors. The psychological studies of the patients who have been treated by psychosurgery have not been particularly revealing, though one recent investigation [1] offers the interesting suggestion that those low in conceptual ability and high in perceptual ability are most likely to benefit. For a review of one of the most exhaustive studies of the results of the lobotomy operation the student is referred to the report of Columbia-Greystone Associates.[2] In part the studies substantiate the clinical observations that the patients frequently

[1] *Proceedings of the first research conference on psychosurgery*. Public Health Service Publ. No. 16. Washington, D.C.: U.S. Govt. Printing Office, 1951. P. 56.

[2] *Selective partial ablation of the frontal cortex*. Columbia-Greystone Associates. New York: Hoeber, 1949

receive some relief from tensions and depressions, but are emotionally flattened out, sacrificing driving force, altruism, and creative spirit.

In any event, at the present time it appears best to restrict the use of the lobotomy to a certain group of patients whose illness is long standing and who have not responded to other methods of treatment. Even then it is important to evaluate properly the use that is made of the chronic illness. For some patients the protected environment of the hospital is the only one in which they may make a relatively satisfactory adjustment. It is probable that continued efforts in psychosurgery will contribute much to a better understanding of brain function, but at present the results of the operative procedure do not justify its use in the treatment of functional disorders where recovery or relatively satisfactory adjustments could occur without it.

NARCOSIS THERAPY

From earliest times the history of medical psychology includes references to the treatment of mental disorders by sleep-producing medicine. A variety of sleep-producing agents have been used, but it was not until relatively recent times that a satisfactory agent for continuous administration was available.

In narcosis therapy for mental patients, the sleep-producing drugs have been used to produce prolonged periods of sleep believed to offer various opportunities for the treatment of mental difficulties. In some instances the prolonged, deep sleep appears to have been used like shock therapy in the hope that the patient will in some unexplained way emerge from the sleep recovered from his mental symptoms. Otherwise the sleep therapy has been used for the production of twilight states during which time various therapeutic advantages might be gained. The most frequent objective is to provide the patient the opportunity to discuss suppressed material. The drug appears to have the effect of reducing the unpleasant emotions, and consequently the patient is able to discuss topics of great sensitivity. In many instances there is a catharsis which has not otherwise been possible and which may be due to the effect of the drug on the normal mechanism of inhibition.

The treatments should be administered by psychiatrists who are well trained in psychopathology and who can recognize, evaluate, and treat the emergency situations that may arise. Sodium amytal has been the most frequently used chemical agent. In deep narcosis therapy there is administered a dose of the drug sufficient to produce 18 to 22 hours of sleep out of each 24-hour period. The narcosis is continued for varying lengths of time, the depth of the sleep depending upon the reaction of the patient and the predilection of the therapist. An excellent brief summary of the literature on narcosis therapy has been presented by Palmer and Braceland (1937). There is no complete

agreement regarding the type of patients who respond well to the treatment, the most effective depth of the narcosis, or the duration of sleep. Broder (1936), who used sodium amytal, was enthusiastic about the method and suggested its use particularly in manic-depressions and reactive depressions. He recognized the possibility that many of his patients so treated might have recovered without the treatment but believed that considerable therapeutic time was saved by the method. He expressed the opinion that manic and catatonic patients would probably respond best to large doses of the drug over a long period of time, whereas simple schizophrenic and depressed patients would respond better to small doses and short periods of treatment. He believed that recovery was not primarily related to the depth of the narcosis or the duration of the sleep but depended upon the twilight state during which psychotherapy was possible.

The results obtained in deep and prolonged sleep therapy have been satisfactory rather than startling. Good results have been obtained in the treatment of schizophrenic excitements, autistic and negative withdrawals, and catatonic reactions associated with affective disorders as well as in various types of stereotyped thinking. Such patients frequently develop a more distant attitude to their psychopathological difficulties and establish a better contact with reality. They often come out of the sleep clearer, more emotionally free, and with a greater willingness to accept the environment. Better rapport is established between patient and therapist, and psychotherapy may be possible with patients otherwise unable to participate.

The deep narcosis has not gained much popularity, but the last several years has witnessed a rather considerable increase in the use of drugs for the production of twilight states. The treatments are now referred to as "narcosynthesis" or "narcoanalysis." Sodium amytal is most frequently used, although some clinicians favor sodium pentothal. The latter has the advantage of faster action and shorter duration, but the former is considered to be the safer drug. Recently the tendency has been to administer the drug intravenously, thus providing for the limiting of the narcosis to brief periods each day. The interview usually lasts 30 to 60 minutes and is followed by sleep of several hours. The method was extensively used during the war to provide the patients the opportunity to reenact traumatic experiences, the emotional catharsis being particularly helpful in connection with recent traumatic experiences. The method has also been found to be useful in combination with planned suggestion and hypnosis for the unearthing of repressed material.

Narcosis therapy is not without its dangers, and consequently throughout the entire period of treatment the patient must be under constant observation to prevent the danger of complications. In deep, prolonged narcosis therapy, the patient may have convulsions upon the abrupt withdrawal of

the drug. In all types of sleep therapy there are dangers of respiratory difficulties and cardiovascular collapse. It is essential, therefore, that every preparation be made to meet the possible complications.

PHYSIOTHERAPY

Mental patients may receive beneficial results through the use of hydrotherapy, electrotherapy, and massage. None of these physical agents can be considered as primary therapies, but they may supplement and help set the stage for other therapeutic measures. Recently with the interest in more exciting measures, there has been a tendency to disregard procedures of physiotherapy, but their importance should not be forgotten. The direct metabolic stimulating and sedative effects of baths, heat, and massage are in themselves important; but there are psychological as well as physical benefits. The hours of rest and relaxation provided by these therapies are of great psychological importance. Otherwise the treatments are frequently valuable in the establishment of rapport. The physicial contact established in the treatment helps to dispel loneliness and allay the feelings of isolation and in many instances serves the purpose of interrupting autistic reveries.

Hydrotherapy, which includes the remedial use of water in any of its forms (liquid, ice, or vapor), is the most frequently used of these devices; and most of the better hospitals are equipped to treat patients by baths, packs, and chambers that can be heated to various temperatures. A variety of types and combinations of types of treatments may be administered. The hydriatic applications may be given at hot, cold, or neutral temperatures, hot and cold combined or alternated, and with or without friction. While the importance of hydrotherapy in the treatment of extreme excitement has been lessened, it is still of great importance in the treatment of anxiety and tension states. A good example of the value of hydrotherapy is the use of continuous warm baths and cold packs to diminish motor restlessness and to produce rest and sleep by their influence on the cardiovascular system. The same measures are useful for respiration, stimulation, general metabolism, and for their beneficial influence on peristalsis. The techniques are not elaborate or difficult to learn and will not be described here. They should, however, be used as therapies and not as threats to restless and excited patients. When judiciously and carefully used, they are important supplemental aids to psychotherapy. The excited patient may be quieted during periods of tension and anxiety, and his physical strength may be maintained through a period which might otherwise be followed by exhaustion. Not only is fatigue prevented, but the relaxation has decided psychological advantages. Variations of the treatment make it possible to secure stimulating, eliminative, tonic, or hypnotic effects. The tonic procedures may be useful in the treatment of patients who have poor circulation and suffer from lowered vitality. In addition to the con-

tinuous baths and cold packs, a number of other hydrotherapeutic techniques such as Scotch douches and cold sitz baths have been useful. All these treatments are valuable when they are individually prescribed. Unfortunately the treatments are often administered without consideration of indications and physiological effect, under which circumstance they are of little or no value.

In addition to hydrotherapy, supplementary treatment of mental patients may include massage and electrotherapy, such as diathermy, heat lamps and pads, and electric heat boxes.

OTHER PHYSICAL AND CHEMICAL THERAPIES

A great variety of other physical and chemical agents are utilized in the treatment of mental patients. Among them are benzedrine sulphate, fever, and vitamin therapies.

Benzedrine sulphate has been used both as a treatment for mental conditions and for relief from fatigue in normal persons. Myerson (1936) has reported on the efficiency of the drug in fatigue and apathetic states in both normals and neurotics, and other investigators have found good success in the treatment of depressed states. Those using the drug have reported that subjects show great variability in their responses and that predictability is difficult. Woolley (1938) observed that reaction to the drug was highly individual in both patients and normal subjects with a wide diversity of response ranging from drowsiness to mild elation. At present the drug is very infrequently used.

Artificially produced high fever is known to have a beneficial effect in certain of the organic psychoses, particularly in the treatment of paresis. The fever is most frequently induced by inoculation with the malaria parasite and is used to destroy the syphilitic spirochete, which is responsible for the disease. High fevers, for therapeutic purposes, are also produced by the electric blanket, the indoctotherm, and the Kettering hypertherm.

In view of the fact that clinical observations indicate that the diet has important effects on behavior, it is not surprising to find that vitamin therapy has been used in the treatment of mental symptoms. Many investigators have called attention to the fact that one of the symptoms of vitamin B deficiency in humans is that of increased irritability and moodiness. In more pronounced vitamin B deficiency, extreme emotional instability, including apathy and depression, has been observed. Williams (1942), for example, restricted thiamine intake in his subjects and found that within 6 to 8 weeks they began to show symptoms of emotional instability. They become irritable, moody, quarrelsome, and developed vague fears, agitation, and depression. These symptoms were not in evidence when thiamine was restored to the diet or when riboflavin was reduced in the presence of adequate thiamine. Vitamin therapy has been used for a variety of mental conditions, the most important

of which is the treatment of alcoholic neuritis and pellagra. Much of the experimental work on the effect of vitamins on behavior has been done with animals, and consequently one may be skeptical of some of the more startling claims. Jolliffe (1941), Norbury (1940), and Aring (1943) have reviewed the studies in which vitamin administrations have been found to be effective in the treatment of mental patients.

CHAPTER 15

THE CLINICIAN IN ACTION

The earlier sections of this book have been concerned with the historical background of clinical psychology, its problems of methodology, and the techniques available for evaluation and correction. What remains to be accomplished is to examine the broad areas of activity in which the clinical psychologist may be engaged, the kind of environments in which these activities may be performed, and finally the presentation of the clinical psychologist in action.

BROAD AREAS OF ACTIVITY

In general, clinical psychology is considered to be a field of application of psychological methods and principles. Actually, as has already been indicated, the problems confronting the clinical psychologist cannot be solved by psychology alone but require the utilization of the principles of many other disciplines. Moreover, the clinical psychologist is not necessarily engaged only in the field of application. He may participate in the development of theoretical principles, do experimental investigations, teach and train. While much of the experimentation and research upon which applications will later depend must be expected to be done by psychologists who are not clinically oriented and by experimentalists outside the field of psychology, a considerable amount of such research and development of theory should be done by clinical psychologists. It is true that there has been a tendency to train many clinical psychologists for the work of technicians; but while a number of such technicians may be necessary, good clinical psychologists should have the broadest possible background both in psychology and in various allied disciplines, and those trained only as technicians should be known as psychological technicians, not clinical psychologists. The psychologist who is clinically oriented should find it possible to expend his energies in any of the broad areas of teaching, training, research, or practice.

Teaching. The clinically oriented psychologist will find the opportunities for teaching many and varied. The need to train large numbers of practicing psychologists and the demand of many students in other fields for a knowledge of the principles of clinical psychology make desirable the participation of the clinical psychologist in the teaching programs of colleges and uni-

versities. Large numbers of students in economics, politics, sociology, history, etc., are expressing an increasing need for basic understanding in abnormal and clinical psychology. Socially oriented thinkers show a widespread distrust in the ability of man to organize a world which can prevent catastrophe and destruction, and in their perplexity they have turned, in part at least, to the understanding of abnormal and clinical psychology. The evidences of man's discontent, his insatiable ambition, his greed, and his aggressive ferocity have tended to focus attention again on the dictum that the proper study of mankind is man, and the importance of abnormal and clinical psychology becomes more evident in the light of such realizations.

Those training for careers in the physical sciences and engineering are also cognizant of the necessity of knowing more about motivation of personality development and interpersonal relationships. Teachers in elementary and secondary schools have focused their attention upon the *whole* child and no longer consider the training of the intellect to be their sole function. Social workers, ministers, recreation leaders, nurses, personnel directors, and business executives have all shown an increasing recognition of the importance of basic understanding of the human personality and are consequently seeking instruction in clinical and abnormal psychology. Finally, the experiences during the last war made it clear that there were a great variety of problems that require the specific ability of one trained in the clinical and abnormal field. In the light of all these facts, it must be evident that much of the time of a large number of clinical psychologists must be reserved for teaching, not only of more professional psychologists but of greater numbers of people in all walks of life.

Training. In addition to formal teaching, much of the time of many clinical psychologists must be given to training programs for professional psychologists. The training of the clinical psychologist should include much more than formal college and university courses. The clinical psychologist will frequently have to develop the history for the understanding of a clinical problem and will require actual experience, guidance, and training in the techniques of research. He will need training in the administering and evaluation of individual and group psychobiological tests and more particularly in the selection of the diagnostic and evaluative procedures that should be administered in any given situation. He will require training and supervision in the approach and methodology for both group and individual therapy. He may have to participate in play and release therapy with children, group therapy, psychodrama, situational therapy, or supportive or insight psychotherapy. He must learn to establish good rapport and handle the initial interview; he must know when to intervene in a situation and a variety of the subtleties of the handling of interpersonal relationships. Most of this training must be carried on in hospitals and guidance centers. It is true, of course, that no complete division of function is necessary, and most clinical psy-

chologists of any stature will both teach and train as well as participate in original research and in the application of psychological principles to problems of adjustment.

Research. Ideally, the clinical psychologist should be engaged not only in the practice of certain psychological techniques and the teaching and training of others, but he should be engaged also in the development of psychological theory and experimental research. Recently there has been some debate regarding who should do research and what should be the nature of the research. Although it is clear that some research having a bearing on clinical psychology must be done by psychologists who are not clinically oriented and by physiologists, biochemists, medical researchers, and others outside the field of psychology, it is important that much of the research be done by clinical psychologists who are in daily contact with those who manifest adjustive difficulties. Certainly many people who lack any firsthand experience with clinical problems make rich research contributions, but there is no substitute for the clinician's face-to-face relationship with the problems. Measurements of events occurring in an artificial laboratory situation and measurements of the behavior of lower organisms, notwithstanding their importance, will not provide sufficient validation for comprehensive theories of human behavior. In part, such validation must depend upon the careful analysis of critical events in the lives of those whose behavior we attempt to interpret.

With regard to the type of research in which the clinical psychologist should engage, we believe that all types of problems both basic and applied should be included. It must be remembered that, with the exception of the so-called psychological technician, the clinical psychologist has strong interests in both clinical and abnormal psychology. Indeed, he could not otherwise be a clinical psychologist. The student of abnormal psychology is interested in the rules and principles that explain and govern human behavior and must understand the abnormalities in the light of the understanding of the normal. All the broad questions of psychology must therefore be stimulating and exciting to him, and his scholarly attitudes should lead him to spend some of his time in basic research without regard to applications. He is, however, more a generalist than a specialist. That is, he does not confine his attention to one functional segment of the organism, such as the process of perception, but attempts to develop formulations of the whole life of man. He does not view psychology only as a laboratory specialty but takes a broader view of its possibilities and obligations.

Clinical Practice. The clinician, as the name implies, may be expected to use a considerable part of his energies in clinical practice of the application of psychological principles to the problems of evaluation, diagnosis, prognosis, and correction of behavior. He may be called upon to measure intellectual capacity or to search for evidences of psychological loss, to measure per-

sonality growth or to evaluate personality patterns, to uncover dynamics or to participate in problems of differential diagnosis, to examine vocational aptitude or to evaluate environmental influences. In addition, he may participate in broad programs of correction, adjustment, and treatment in both individual and group situations.

SITES OF ACTIVITY

In view of his breadth of interest in behavior situations and because of the nature of his special abilities, we may expect to find the clinical psychologist active in a great variety of institutions and organizations. In fact, wherever behavior evaluation and adjustment are attended to, the special abilities of the clinical psychologist may be utilized. Evaluation and adjustment are constant problems, and consequently all age groups from infancy to old age are concerned. Nursery schools, child guidance clinics, and pediatric institutes make constant use of the clinical psychologist. Courts, reformatories, and prisons as well as institutions for the feeble-minded, mental hospitals, outpatient clinics, and institutions for the aged are in need of the services of the clinical psychologist. Schools and colleges, industry, and large organizations such as the armed forces find the clinical psychologist valuable. The duties performed will be somewhat dependent upon the nature of the institution, although in general such duties will always have to do with the evaluation and correction or treatment of the individuals and groups who are brought to the attention of the psychologist. The type of duties performed will also depend upon the degree of authority and responsibility given to the psychologist.

Nursery Schools and Child Guidance Clinics. The psychologist in the nursery school may be engaged primarily in research, classification, or guidance. In one instance he may be using the school as a laboratory for the study of specified problems of psychological growth and development of the child. In another instance he may be engaged in the study of the young pupils for the purpose of evaluation and classification for practical applications, or he may be participating primarily in the correction and treatment of behavior deviations. In many instances he will be engaged in all three of these objectives.

Psychologists attached to child guidance clinics will participate in all the above activities, but the emphasis on the type of activity is influenced by the fact that here the children are not assumed to be an average group, as is true of the nursery school, but are brought to the clinic as a result of concern about the child's adjustment. If the psychologist is not in a junior position, he may be required not only to make an evaluation but to select the types of procedures to be used in the evaluations. He may also be required to develop a history on which much of the understanding of the child's problems

depends. In many instances it will also be necessary for him to deal with the problems therapeutically. In the last several years an increasing number of psychologists have developed and put into use methods for group and play and release therapy in guidance clinics.

Hospitals and Institutions. Most mental institutions, outpatient clinics, and institutions for the feeble-minded and the aged have well-organized departments of psychology. In the large and well-organized mental hospital, the psychological program is an exceptionally broad one providing opportunity for all degrees of teaching, training, research, and clinical practice. The institutions provide on the one hand a training or intern program for clinical psychologists and on the other hand a diagnostic and therapeutic service to the patients. In such institutions there are wide differences in the scope of activity of the psychologists. The psychologist may be asked to administer certain tests and report the results, or he may be asked to supply information regarding the status of the patient and be left to select his own evaluative techniques. He may be asked to attack a particular problem such as determining the patient's intellectual capacity, his degree of psychological loss, his characteristic personality type, the type and modifiability of his ego defenses, the degree and type of fantasy involvement, or the uncovering of specific dynamic factors. He may be expected to do a broad evaluative study for purposes of classification, differential diagnosis, type of therapy to be used, prognosis, or for the purposes of establishing a base line for later comparison after specific treatment. At the time of the patient's dismissal, the psychologist may be required to provide information for vocational adjustment or environmental placement or manipulation. In many such institutions the psychologist may take an active part in group therapy and the psychodrama, and in some instances he may carry on individual psychotherapy. In most instances a considerable block of his time is allocated to research projects. These may be basic research projects or research in connection with shock, sleep, and other specialized therapies.

In the institutions for the feeble-minded and the aged the activities of the psychologist are more circumscribed. In the former, greater attention is given to the classification of the patients according to intellectual capacity, but studies will also be made of the personality structure, emotional attitudes, motor ability, and educability of the patients. In the latter, the degree of psychological loss and the adaptability of the patients are of primary concern.

Courts and Penal Institutions. For a considerable period of time the number of psychologists who are employed to give advice to the courts has steadily increased. Legal statutes require that the court secure an opinion indicating the responsibility of the defendant at the time the offense was committed, at the time of the trial, and at the time that the court imposes the sentence. The court needs to know the mental status of the defendant at the time the crime was committed in order to determine the responsibility. It needs also

to know the mental status at the time of the trial in order to determine the individual's ability to defend himself, and at the time sentence is imposed, in order to determine his ability to understand the justice of the penalty that is given. In addition to the determination of responsibility, the court needs also advice with regard to the disposition of the case. What are the dangers of repetition of criminal acts, and what steps may be taken to prevent recurrence? If found guilty, should the defendant be sent to prison or a reformatory, or should suspended sentence or parole be recommended? Regardless of the type of sentence, can further advice be given with regard to the way the defendant should be treated in order to provide for the greatest possibility of rehabilitation? An increasing number of clinical psychologists are to be found engaged in positions that call for giving advice to the courts on the important questions of responsibility, disposition, and rehabilitation of the criminal. The psychologist so engaged will study family and environmental influences, examine the defendant's motivations, measure the intellectual capacity, study the personality formation, and present his findings to the court.

Reformatories, prisons, and other correctional institutions also include psychologists on their administrative staffs. Many such institutions have a classification clinic that attempts to obtain a complete knowledge of the mental make-up of the inmates. The first purpose of such a clinic may be that of classification for placement within the institution, but the information obtained must ultimately serve for the effective treatment of the many problems that are manifest. The clinic thus has both a diagnostic and a therapeutic function, and from it must come the body of information that serves as a basis for the development of the treatment that will be designed to assist the inmates to readjust to useful social living. Such studies are of greatest value when they are not made for the purpose of assigning a diagnostic label but provide a real description of the total personality and a formulation of the kind of placement and treatment that is likely to be most effective. Research has been greatly neglected in the correctional institutions, but there are signs of a general awakening of interest and opportunity. The correctional institution provides a laboratory of human experience that offers great opportunities for observation, study, and research.

Educational Institutions. The emphasis on the holistic approach to the study of behavior has resulted in a realization within the field of education that not only the intellect but the whole personality comes to school, and consequently the clinical psychologist finds a variety of tasks awaiting his service within educational institutions. The defective, delinquent, and gifted child needs to be properly classified and dealt with. What is perhaps of even greater importance is that the normal child needs to be studied, and methods need to be devised for the handling of individual differences. Personality studies for purposes of vocational and avocational guidance and for prob-

lems of adjustment also claim the attention of the school psychologist. In many colleges and universities there is a psychological clinic, the staff of which concerns itself not only with the classification of students according to intellectual capacity, special aptitude, and interests but also makes broad studies of personality development and consults with students on problems of personal adjustment.

Other Areas of Clinical Activity. In industry, in large organizations like the armed forces, in mental hygiene clinics, and in recreational organizations, the need for clinically oriented psychologists is steadily increasing. During the last war the armed forces discovered that clinical psychologists could be effectively used in hospitals and rehabilitation centers, in placement and classification centers, and, indeed, even with combat units. The scope of activity of the clinical psychologist in the military service is particularly broad, including teaching, training, diagnosis, classification, treatment, and research. In mental hygiene clinics the psychologist is used primarily to study the intellectual and personality make-up of the patients, but in some clinics the scope of activities may be considerably broader. In industry and recreational organizations and, indeed, wherever the study of human capacity and adjustment is given a prominent place, the special abilities of the clinically oriented psychologist are sought.

TECHNIQUE OF EVALUATION

Finally we should like to present as realistic a picture as possible of the clinician at work. It is possible to approach the task in a variety of ways. One possibility would be to approach the clinical problems presented by different age groups, considering in order the problems presented by the child, the adolescent, the adult, and the senescent. These periods could be further subdivided so that we might consider the preschool and the school child and the early and late adolescent, etc. Childhood lends itself much more readily to such treatment because of the frequent and marked alterations that occur. Compared to childhood, the periods of adolescence, adulthood, the climacteric, and senescence are much more homogeneous and less variable. Indeed, if this were a treatise on clinical psychology for childhood, we should be inclined to relate the problems more specifically to age periods. Kanner (1935) has done this particularly well while focusing on socialization as the outstanding achievement of the period. Recognizing that there are no abrupt changes and that development progresses gradually, he has distinguished three periods of socialization under the headings of elementary, domestic, and communal. The period of elementary socialization is described as comprising the first 15 to 18 months of life. This is the period in which the infant is totally dependent on others, and in general the functions acquired at that age arise almost entirely from within. Kanner recognizes that adequate development may be delayed or

hindered through physical illness or faulty management, and points out that locomotion may be delayed if there is restraint of movement, or the silent environment may delay the progress of auditory orientation or linguistic achievement; but in general the period of elementary socialization is seen as progressing according to the laws of nature that allow for slight variation.

At approximately 18 months, the normal child is seen as having acquired the necessary sensory, motor, linguistic, emotive, orientative, and adaptive equipment to be ready for domestic socialization. This period comprises the rest of the preschool period from about 18 months to 4 or 5 years. It revolves about the home as the main focus of interest and is seen as the period of adequate and effective habit training. Regularity, self-dependence, and personal habits are being formed; and the foundations for temper tantrums and fear reactions and unusual attachments may be laid or removed. The child during this period is seen as being weaned from the nipple and the crib to become an active member of domestic life.

The final period of communal socialization is seen as beginning at about 4 or 5 years concomitant with the branching out into community life. The horizon is extended, and the child enters a number of other circles and becomes community conscious. He must now begin to learn to stand on his own feet, make his own decisions and take the consequences, fight his own battles, and proceed with the gradual emancipation from the family. The development of behavior problems and adjustive difficulties must be studied in terms of the experiences of the child during the important periods of socialization, and it is both possible and reasonable to attempt to describe the clinician's activity in handling clinical problems that develop in these age periods.

In similar fashion one might describe the clinical problems that show themselves in adolescence, adulthood, the climacteric, and senescence. Developing the problems according to age, however, becomes more difficult as one goes up the age scale. Adequate treatment would certainly require a chapter for each age group, and the method soon becomes superficial, since the adult has already been both a child and an adolescent, and his present situation cannot be understood except in terms of the experiences of these earlier periods. There is no question of the fact that the age factor must be taken into consideration in the evaluation of the behavior of any individual. In other words, it is possible to consider the problems of childhood, adolescence, the climacteric, and senescence. Thus the child may develop problems connected with weaning, the adolescent may show difficulties in adjusting to the situations surrounding puberty, the middle-aged person may show personality changes associated with the endocrine imbalance of the involutional period, and the sensescent may develop problems that are related both to the wearing out of the organism and the environmental changes that are associated with old age. In each instance, however, the maladjustment must be

viewed in terms of the total situation. Hereditary and constitutional factors and the whole series and spacing of environmental relationships in earlier periods, as well as the outlook for the future, must be evaluated.

For example, the problems of the climacteric may be in part related to the physiological changes that are occurring, but the involutional period is accompanied by many other difficulties. There is a gradual decline of health and vigor, an increase in chronic illness both in the self and in family and friends, and a realization that time is passing swiftly and that new adventures and accomplishments are less likely than in the past. While these events are all associated with the involutional period, the reaction of a particular person to these circumstances is an individual one and is related to the original make-up and the circumstances of earlier periods of development. Although the forces peculiar to the period must be carefully weighed, understanding must depend upon a more thorough analysis of the life span.

Another way of viewing the clinician in action is to examine his tactics in terms of the problems presented by the patient or the client. The clinician may be presented as dealing with vocational problems, school adjustment, religious problems, marital problems, or general difficulties in interpersonal relations. In much the same way the clinician's activities might be approached from the methods of attack on problems of stammering, functional tics, hypochondriasis, reading disability, fears, dishonesty, or generalized asocial behavior. While it is true that such problems will be presented to the clinician and will occasionally be satisfactorily resolved by dealing only with the problem or complaint, such instances are rare. People who have been relatively comfortable and normal most of their lives will occasionally react to situations of abnormal press with irregularities that may be dealt with simply and directly. Normal people might require and profit by the development of understanding with regard to religious, marital, or vocational problems. More frequently, however, the clinician will find that the adjustment difficulties are far removed from the original complaint and that the religious, marital, and vocational complaints are symptomatic. The clinician's task will, therefore, not be that of solving a problem or a series of problems but rather that of guiding the individual to grow emotionally, to develop insight and understanding, and to attain the maturity that will enable him to deal adaptively to the continuing problems of living. In the same way the stammering, the functional tics, and the abnormal phobias are not usually specialized problems requiring specialized methods of attack but are signs of more generalized tension, anxiety, and insecurity, the understanding of which requires searching analysis of the personality development.

The method used most frequently to present the activities of the clinician is to view his approach to the evaluation and treatment of types of behavior. In fact, this is probably the most characteristic clinical method. The original task is that of diagnosis or labeling the patient according to a particular

pattern of symptoms. The patient is thus classified as a psychasthenic, schizophrenic, manic-depressive, paranoid, or hysteric type. Schafer (1948) has presented a very good group of case studies organized primarily from the point of view of diagnosis. While the diagnosis must be made, there is danger in becoming lost in diagnostic concepts that are not particularly meaningful or helpful.

It seems to us advisable to present the clinician's task from the point of view of diagnostic types but with certain modifications that indicate the magnitude of the task and that are more descriptive of the factors that led to the difficulty as well as of the indications for treatment. The diagnoses that are used do not lead anyone to know what the problem is. The term anxiety neurosis or obsessive-compulsive state does not tell us what is wrong with the patient in the same way that the diagnosis of appendicitis or measles does. The diagnoses that we are concerned with are synthetic and of great complexity, and no one word is therefore adequate to describe the condition. The task of the clinician is to look into and evaluate all the factors that may have a bearing upon the patient's present condition. It is necessary, therefore, to examine the complaint, the somatic and constitutional factors, the environmental factors, the intellectual, motivational, and emotional factors, and from these to develop a synthesis that is the basis for diagnosis, prognosis, and treatment of a particular case. This complex evaluation will not always be done by one person. It quite frequently is the composite view of psychiatrists, psychologists, and social workers participating in the development of the case material. Also the various factors will not always be developed in the same order or in the order in which they are discussed here. The order of the clinical steps that are taken will vary according to the situations that are peculiar to each case. The synthesis of understanding will have to be revised constantly as new facts are brought to light in each study.

The Complaint. The patient comes to the clinic or is brought to the clinic with a complaint. Since this is what bothers him, it will have to be the beginning point of the examination. If the patient is an adult and comes voluntarily to the clinic, he will state the complaint himself. If the patient is a child or an adult patient too sick to come willingly to the clinic, the complaint may first be stated by the parents or those who bring the patient to the clinic. It will be necessary then to secure a careful history of the onset of the difficulty, the circumstances under which it first appeared, its development up to the present time, and the ways in which it has been handled in the environment. Following this investigation will be a careful examination of the complaint in such a fashion as to indicate the direction of the treatment.

The beginning method of dealing with the complaint is extremely important, since it provides opportunities for understandings of environmental circumstances and personality dynamics that are otherwise difficult to obtain. The complaint may be described quite differently by the patient, his parents,

his teachers, and others who may play important roles in his life. Whenever possible, it is valuable to have a verbatim recording of the complaint. This is particularly important in children's problems where the side remarks of the parents may be more helpful than the plain statement of the complaint. An interesting example of the kind of material that may come to light is presented by Kanner (1935, p. 27) as the verbatim statement of the mother of a 7-year-old girl patient.

> She don't sleep good. She kicks in her sleep. Her teeth is so bad. I had one of them pulled. She don't want nothin' to eat. All she wants is something sweet. She's awfully nervous. She bites her finger-nails. When she gets excited, she just gnaws and gnaws. She's on the go all the time. She won't sit down two minutes. She don't mind very good. I don't like to holler at her but scold her because she bites her finger-nails and gets so nervous. She wants to go to school all the time but I wouldn't let her go until I find out what's the matter with her. My little brother lives with me. He is four years old. The two kids fight a great deal over toys and candy. Her eyes is bad, too. I took her to the movies one day and she said her eyes was bad. Everything went dark. She kept rubbin' them. That's the only time she complained. She's always eatin' between meals. She loves cake and candy. I'd rather give it to her than hear her bawl. She loves all kinds of stuff. She likes greens and cabbage and everything. She won't go to bed unless I go with her. She's scared to go in a dark room by herself. She's been that way ever since she has had scarlet fever. She's afraid of doctors. She's afraid they are going to stick needles in her. She kicks her legs up and screams. She would tear up the house if she don't get what she wants. I give her anything she wants. If I haven't got it I borrow it. She's always whining or cryin' about something. When she meets strangers she bites her finger-nails and gets so nervous. She fights and hits animals. She killed a little tame rabbit she had. My sister is going to have a baby. She asked about it. We told her that a stork is going to bring it. Now she wants to see the stork when it comes.

The vivid picture of the home environment of the patient and the personality characteristics of the mother are of inestimable value in the understanding of the situation. In many instances the questioning of the parents with regard to the complaint may lead one directly into the home atmosphere and provide important background material.

In all instances after the complaint has been described, it is necessary to inquire about other complaints; otherwise significant material will not be elicited. The urgency of a particular complaint may prevent the informants from presenting other complaints that may be equally important.

In a large number of situations of evaluation and treatment, it may be impossible or inadvisable to procure statements regarding the complaint from

anyone but the patient himself. Even when this is not so, the patient's own complaint is more important than the complaint as stated by others. In the treatment of children, the child must be given the opportunity to give his own contributions to the complaint in the absence of the parents. In the adult, also, sufficient time must be allowed for the patient to develop the complaint. No matter how far such complaint may be displaced from the original source of the difficulty, it is brought to the clinic as the patient's problem of the moment. Later the more organized and systematic details that are not spontaneously given must be elicited, but first one must capitalize on the orienting value of the complaint. The next logical step is an examination of the person who presents the complaint. This step is complex and involves the understanding of both constitutional and environmental factors and the study of the individual's intellectual capacity, his drives, and emotional attitudes.

Environmental Factors. In an effort to understand the patient who brings a complaint, it will be necessary to become as familiar with the patient's past and present environment as possible. The influence of the home, neighborhood, school, work, and recreational experiences must all be evaluated. Part of this information may be developed through conferences with those who have been closely associated with the patient, but much of it can be obtained only from the patient. What is important, of course, is its personal meaning to the patient, and this only he can know. Some of it may be obtained in the early interviews, but much of it will come to light only in the course of treatment.

Since the earliest environmental influences take place in the home, the understanding of the home environment and its meaning to the patient is essential. Perhaps of greatest importance are the interpersonal relationships of the various members of the family. The relationship existing between the parents has important effects upon the security and attitudinal development of the child. Differences between the parents with regard to ideas on child training, problems of religious education, as well as their incompatibility, affect the development of the children. Parental dissensions, no matter what their type or source, need, therefore, to be understood. The specific form of association between the parents and the child will also be of particular significance in the formation of character and habits. The degree to which the individual has had an opportunity to develop regularity of habit, responsibility, and independence is related to the degree of overindulgence and overprotection of the parental figures. In a like manner, parental indifference and neglect, hostility, and rejection, as well as the inconsistency of the disciplinary pattern, will condition the formation of the personality of the young child.

The development of an understanding of these factors is not easily attained. Too frequently a quick summary is made that does not do justice to the facts. The mother of the patient is described as being "oversolicitous" because had she been the mother of the person who is developing the history she would

have been so considered. What is important, of course, is the personal meaning and influence of her behavior on the patient. It is important to avoid falling easily into such descriptive phrases and to describe events of behavior rather than to attempt to interpret them. The real meaning of the behavior may not be entirely clear until the therapy is well under way.

Parents who are extremely ambitious for their chidren may load them with tasks beyond their capacity and set standards of accomplishment that are impossible to attain. The child may rebel against the impossible situation and show unhealthy symptomatic behavior, or he may continue to strive to meet the impossible expectations and respond to the dilemma with pathological personality attitudes.

The effect of the interpersonal relationships between siblings is also important. The only boy among several girls, or the only girl among several boys, and various other groupings have been separately viewed as having important relationships to personality development. The child's place in the family, in order of birth, may certainly be of significance, but there has been entirely too much generalizing about the problems of the only child, the first child, and various other categories. It is true that parental attitudes and the attitudes of the children toward each other may be influenced by the number of children and their spacing, but they are also influenced by many other factors, and one should avoid jumping to conclusions in the absence of sufficient evidence. The various circumstances that may lead to resentment must be carefully evaluated, and a synthesis of understanding should depend upon the uncovering of real events rather than upon superficial assumptions.

The frequent appearance of the broken home in the experience of those who suffer adjustive difficulties calls attention to the necessity of careful evaluation of a number of other environmental circumstances. The sudden disruption of the home life, often through the illness or death of one or both of the parents, may have a long-standing effect upon the personality development of the young. Pathological attitudes may develop also in the family that slowly disintegrates. The family may finally break up through desertion, separation, or divorce; but the personality difficulties that develop in such settings are better understood if attention is given to the causes for the slow disintegration of the family and the difficulties that accompany it rather than to the fact that the home is finally broken.

The attitude of the parents with regard to the teaching of religious, moral, and social standards plays an important role in the development of the personality of the child. When there is undue rigidity on the part of the parents or poor communication between the child and the parent, the child will lack sufficient opportunity to try out various perspectives for the development of understanding. He will be left, therefore, with rigidities and great areas of sensitivity that make later adjustments difficult or impossible.

The neighborhood provides the child with his first lesson in extra-domestic

social living. The degree to which he is accepted, rejected, or ignored will result in important complications in his personality development. He may be pushed into solitude and fantasy from the lack of proper play opportunities or playmates. Frequent change of neighborhood with the need of continually making new adjustments may have damaging effects, especially if the child or his parents are rejected because of racial and religious intolerance, or economic inequality. Any attempt to develop a diagnostic understanding of personality disorder must therefore take into account the influences of the neighborhood.

As an environmental influence the school is of secondary importance only to the home. The amount of time spent in school, along with the number and type of interpersonal relationships that are experienced, makes the school an important part of everyone's life experience. Such experiences as the relationship with teachers and classmates, the continual parental interference with the school authorities, frequent changes in schools, long absence from school, or placement in the wrong grade will all be important in the development of the personality. Along with the school influences it is essential that the work experiences be carefully evaluated for understanding of their influence on personality growth. It must not be assumed that these early environmental influences are important only in efforts to develop the understanding of problems in the young child. They provide, as well, the background of material that is necessary for the understanding of adult personality disorders.

Constitutional and Somatic Factors. A complete clinical understanding of psychopathy requires a careful evaluation of both somatic and constitutional factors. The fact that the patient comes for treatment of psychopathy does not mean that the personality disorder is not caused by or related to organic or somatic factors.

The types of relationships between personality disorders and organic ailments must be carefully evaluated. A number of groups of organic disorders may be associated with psychopathy. One such group includes a variety of disorders due to the destruction of cortical tissue. Thus brain tumors, meningitis, encephalitis, and hydrocephalus may be expected to be accompanied by psychological deficit. In another group, including infectious disease, intoxications, and nutritional disturbances, psychopathy may be found. Delirious reactions with disorientation, misinterpretation, and hallucinatory episodes may frequently accompany such conditions. In still other instances, mental pathology may result from failures in the endocrine system as is evidenced in cretinism. In all these cases the psychopathy depends upon permanent or temporary neurological disorders or upon failures in the glands of internal secretion.

In addition to the psychopathy that is specifically caused by organic loss or failure, we are familiar with a variety of physical-mental relationships. The researches in the field of psychosomatic medicine have made clear many

of these relationships. Frustrations and anxieties may find expression in all kinds of disturbances of the organism despite the fact that no pathological changes have taken place in the organs themselves.

It is also well known that poor health, deformed bodies, and personal ugliness, although not directly responsible for personality disorders, may leave their telling marks on the personality development. Thus, the crippled child or the child with a hearing or vision defect may become sensitive and seclusive, or the ugly or unattractive child may become resentful and aggressive.

Despite the fact that satisfactory evidence is difficult to establish for constitutional factors, there are a number of conditions that strongly suggest that something is lacking in the original endowment. It is important, therefore, to assemble all available information regarding the appearance of special pathological syndromes in the family as well as an unusual accumulation of disorders spread over the entire life span of the patient. Correlation between the configuration of the body and personality make-up as suggested by the work of Kretschmer (1925) may also provide valuable information. In any event the study of the somatic and constitutional factors may provide important behavior understandings.

Intelligence. In the clinical examination of behavior disorders, the diagnostic evaluation and implications for treatment will be dependent, in part, upon what one is able to disclose with regard to intellectual resources, the ability to make use of such resources, the amount and type of loss, and the relationship of the cognitive processes to the effectiveness of the total personality in action.

The development of such an understanding is extremely complex and requires much more than the simple administration of a few tests and the assigning of a numerical score to represent the intellectual power of the individual. In Chaps. 4 and 5 we have discussed the nature of intelligence and its measurement and given attention to the concepts of mental deficiency and intellectual loss or deficit. The kinds of techniques available for studying such capacities and losses have been described along with their weaknesses and unreliabilities. In many clinical situations it will be necessary to provide some answer to the question regarding the original intellectual capacity. In doing so one will make use of all the information and the best techniques available. The information derived from the analysis of the tests administered must be compared with the performance of the individual in life situations. Any discrepancies between the measured capacity and performance in living must be studied from the point of view of motivation and social adaptability. It may also be necessary to consider the differences in the use of intellectual capacity for different kinds of performance.

One does not have to be mentally deficient to have the limits of his intellectual capacity play an important role in the development of his adjustive difficulties. The motivation and drive must therefore be compared with the

intellectual capacity. It is necessary to know with whom he is competing and what the standards of performance are that he feels he must attain. The strenuous efforts to compete with a relative or friend who has been held up to him as an example or the pressures for perfection by parents and others may make average or even superior intelligence insufficient.

In other situations the clinician will be required to use evaluative procedures to answer important questions with regard to intellectual loss or deficit. Such information will be required for important questions of differential diagnosis as well as for ascertaining loss occasioned by shock or sleep therapy or psychosurgery. The techniques available for such studies have been described in Chap. 5, along with questions of their reliability. In considering the problems of deficit, it is important to attempt to distinguish between real loss and differences in motivation. As has been pointed out, observation of some schizophrenic patients seems to suggest that the apparent loss of cognitive function is not real or actual but is due to a lack of motivation to sustain attention to the task or to the presence of conflicting emotions. Not infrequently, with considerable coaxing and push to sustain attention, the patient will pass tests that he has previously failed. For example, a schizophrenic patient recently given in the prescribed way the directions for the ball-and-field test drew in the circle what appeared to be a hodgepodge group of boxes and roads. When asked what he was doing, the patient continued a line around to one of the boxes with the following statement, "And then you go around Dr. P's office, and if he says you are well you go home." The examiner then insisted that he was supposed to be looking for a ball, whereupon the patient said "Oh, to find the ball," and drew a series of circles for a perfect answer.

Quite aside from the measurement of intellectual capacity and the uncovering of intellectual loss, the effectiveness with which one engages in problem-solving situations reflects his particular personality organization. The clinician, therefore, studies the intellectual processes, not only with regard to the independent information related to intellectual capacities but for the expressions of emotional disorders and uniqueness of the personality in action. Such understandings may be obtained from the quality of the answers and the methods of dealing with problems and also from the observations of behavior and attitude in the test situations. It is possible to get a real picture of the individual's responsiveness, persistence, distraction, embarrassment, and many other personal attitudes. Thus one may be alert to discover whether the individual reacts spontaneously or requires coaxing and encouragement, whether he is attentive or easily distracted, whether he is alert or listless, quick or hesitant, embarrassed, shy, or aggressive and self-confident, whether he is tense, preoccupied, interested, or indifferent, whether he is persistent or gives up easily.

The questions in the test may not only provide one with the possibility of securing right or wrong answers but may touch off or bear on important problems of adjustment. Thus an individual may become tense and mute because a question in the test that is otherwise indifferent has touched upon an area of sensitivity.

An inexpert examiner may frequently score an answer as a failure because he fails to recognize certain important characteristics of the person who is being examined for intellectual capacity. Recently a group of children were waiting to be examined in a guidance clinic. One of the children was an extremely aggressive youngster who continued to bully the others and to talk about his strength and ability. A few minutes later while observing him in the test situation the following was noted. The examiner asked the question in the Binet scale, "What's the thing to do if a playmate hits you but doesn't mean to do so?" The child spontaneously and aggressively replied, "Hit him back." The examiner recorded the answer as a failure. A few minutes later the writer played ball with the child, and after a free and satisfactory relationship was established, he asked the child to listen carefully to the question and not to answer too quickly. The same question was then repeated. The child reflected a moment and replied, "I wouldn't do anything if he didn't mean it—but if he meant it." The aggressive attitude came forward again in the last part of the sentence and left no doubt about what would be done if the hitting was intentional. One had here an opportunity not only to give the child a proper scoring in the response but also to make other observations of the personality in action.

Emotional Factors. The total personality cannot be understood without careful and rigorous attention to mood and emotional characteristics. It must be recognized that these cannot be viewed as separate and distinct characteristics. In the same way that cognitive processes may assume a highly affective coloring, so affective experiences may be intellectualized. The search will not be for emotional entities but for broad constellations involving a situation and the individual's more or less characteristic response to it. Consideration will be given to whether the emotion is exaggerated, repressed, intellectualized, or acted out. It is the diffuse and regulative whole function that claims the clinician's attention. What is the intensity of the process, its characteristic mode of expression, and the degree of the individual's awareness of it? Is it appropriate to the situation, and to what extent is it dependent upon some specific event? One effort will therefore be to determine the extent to which the emotional reaction is commensurate with the situation.

Some very strong emotional reactions may be quite appropriate to the stimulating circumstances. The death of a loved one may not only produce profound grief but may cause an upheaval in the physiological mechanism,

disturb the normal functioning of the intellect, and interfere with routine behavioral activities. In other instances we may find dramatic, uncontrolled emotional outbursts that are entirely out of proportion to the disturbing circumstances. In the very young child this behavior, showing itself in breath holding and temper tantrums, may be fairly clearly understood; but in the older patient, the phobias and anxieties and long-standing emotional habits may require painstaking analysis for understanding. In the more serious disorders the incongruous emotional response becomes even more difficult to understand. Such reactions are frequently altogether contrary to expectation. There are outbursts of laughter, rage, or weeping which seem to be completely lacking in foundation. On the other hand, situations which one would expect to be met with strong emotion are responded to with apathy or indifference that is so unusual as to appear bizarre. In other instances the individual evidences various degrees of elation and depression which need also to be evaluated with regard to their appropriateness as well as with regard to the degree to which they are transient or permanent. These must be understood both as responses to environmental influences and as indicators or signs of what goes on within the person.

The clinician must therefore direct his attention to a great variety of questions regarding the mood and emotional characteristics of those who are examined. Is there a basic mood to which one tends to revert when not definitely stimulated in other directions from without? Does it fluctuate, and if so, what is the regularity of the fluctuations? Is it colored by anxiety, fear, irritability, suspicion, and can the changes be accounted for or do they seem to come out of the blue? Do the reactions come out clearly, or are they submerged? What is their relationship to physiological responses, and to what extent are they intentionally utilized? What are the evidences of degree of sensitivity to others? How free or restricted are the expressions of the emotions, and when inhibited, what are the motivations? To what extent have the emotional responses been helpful or hindering? These and many other questions will occupy the clinician in his efforts to understand the emotional factors. His examination of these factors will serve to indicate the necessity for the psychobiological and biosocial point of view since they cannot be detached from the individual's total personality and the situation in which he finds himself.

Conative Factors. In addition to the cognitive and affective factors, it is necessary for complete understanding to attend to the conative factors which manifest themselves in the urges, desires, appetites, action tendencies, and goal-striving behavior. A careful study must be made of eating, drinking, elimination, sexuality, rest, activity, and the striving for power and conformity.

It may be necessary to secure as much information as possible regarding

early feeding difficulties, any unusual circumstances related to weaning, situations in which there was loss of appetite, and various attitudes and habits related to oral behavior. The experiences in bowel training, the circumstances related to enuresis, experiences with constipation and diarrhea, and other behavior related to anal function need to be evaluated.

In an effort to become acquainted with all the factors which contribute to the making of the personality, information must be acquired with regard to the development of sex behavior and attitudes. Beliefs, superstitions, and curiosity regarding procreation and birth, anatomical differences between the sexes, psychosexual deviations, and overt sexual experiences must be investigated. The steps in the development of sexual behavior and attitudes, along with the attitudes of parents and friends to these topics, may be helpful in the development of understanding of anxiety, guilt, hostility, and submissiveness.

It is necessary also to evaluate the individual's drive to assert himself and the manner in which it appears in his behavior. Is he overly aggressive or unusually passive? What are the needs for approval and praise, prestige and superiority, attention from others? To what extent are these directly manifest either in aggressive or submissive behavior, and to what extent are they covered over?

Synthesis. The job of the practicing clinician is in the beginning essentially an analytic one. Using all the material that can be gathered and reconstructing the events in the frames within which they took place, he develops a biographical analysis. If help is to be given, the clinician must be able to develop a synthesis or aid the patient in developing a synthesis that provides a clear picture of the personality in action. The complaint which brings the patient to the clinic will be understood in light of the constitutional and somatic factors, the intellectual capacity, the affect and biological drives, and the life experiences of the particular individual. In some instances the problem may be relatively simple, and little analysis may be necessary. In other instances a long period of time may be required to make the searching analysis that is necessary for the complex and obscure difficulty. In such instances much of the important material may not come to light until the therapy is well under way, and hypotheses will have to be constantly revised in the light of new understandings.

Using all the information that is available the clinician makes a decision regarding the treatment of the patient. In some cases enough information may be provided in the beginning to enable the therapist to give more than a simple diagnostic name to the problem and consequently to decide upon the method of attack. In other cases the beginning treatment may need to be elastic enough so as to allow for indicated change of tactics without danger to the patient.

CASE SUMMARIES

The student of clinical psychology will find that the literature on clinical case material is far from adequate. There is still a great need for more verbatim reports of the proceedings in clinical activity; in fact, complete coverage can be accomplished only when full books are devoted to the subject. The *Case histories book* edited by Burton and Harris (1947) gives the student an opportunity to view a number of different clinicians in action as well as to examine the diagnostic and therapeutic procedures for a variety of problems of psychopathology. For the student who has a satisfactory familiarity with the diagnostic tests, Schafer's (1948) *Applications of clinical tests* is an excellent example of what may be accomplished in the utilization of psychological tests for diagnostic purposes. The diagnostic summaries in Schafer's book have been arranged according to disease syndromes, but throughout the book Schafer has been able to provide information for the understanding of personality development. The material of each case is organized so as to make possible a synthesis of the personality in action. The arrangement, however, is in terms of diagnostic type, and consequently so-called atypical patterns are not presented. One of the first discoveries of the practicing clinician, however, is that the described typical patterns are actually rarely seen. In most instances the patient does not fit easily into the classification hysteria or obsessive-compulsive state but rather presents a behavior syndrome that is not easily catalogued. Also even when the problem of differential diagnosis has been resolved, there is still the problem of deciding upon the therapeutic goals and methods. Rejecting the usual arrangement of case material to show classical diagnostic patterns, we have decided to present some case material that is selected at random, believing that a random selection should give a fair idea of the number of times that the patient fits easily into a recognized diagnostic pattern. The material is selected from the cases of three different clinicians. The impressions were written from whatever history was available and from a few clinical interviews with the patient, supplemented by the results of the psychological tests that were administered. The results developed from the psychological tests are presented in a nontechnical way so as to give the student who has not yet mastered the testing technique a picture of the kind of information that may be obtained.

CASE I. Female, Age 19, Single, Student, Episcopal

Main Facts

The patient has been in two other hospitals with convulsive-like seizures associated with laryngospasm. She stated, "I came to this hospital to get active psychotherapy. I don't know what's real any more. I know I am here but then again I don't know. I'd like to find out why I don't want to see my

parents, why I had to be hospitalized to begin with, why I can't go to school, why everything. I am just mixed up over everything."

History

The patient's mother is 49 and the father 62 years old. The patient is the youngest of 3 children. The oldest child was a boy born 7 years before the patient. He lived only 4 days. A sister born 2 years after is well and has been married for 3 years. The patient believes that her parents wanted a son when she was born. The history of familial determinants, as far as psychosis is concerned, is negative.

The patient said of her parents, "I thought I used to get along well with my mother. I don't know, rather a perfectionist, everything has to be just so. As far as I know I love her; but I don't want to see either my mother or my father. I don't understand it; they have always been good to me and given me everything. I don't know about my father either, rather jolly. I feel indifferent, I guess. I don't know how I feel about anyone. It's just what I can't understand, either no feelings or too much."

No significant information could be obtained in regard to the patient's early development. The mother describes her as a very progressive and efficient girl who always wanted to be doing something. She graduated from high school at 17 and started college but remained there only 3 weeks because of severe "coughing spells" which finally required hospitalization.

The patient believes that she is too fat to be attractive to boys and says that she had no close friendships. She compares herself unfavorably with her sister. She says, "I wish I was pretty like my sister. She can draw and sing. I can't do anything."

When questioned about her religious activities, she said, "Sometimes I go to church regularly and sometimes hardly ever. I don't know if I believe in any religion whatsoever, nor in God either. I used to believe in people."

The patient started menstruating at the age of 12. To most of the questions directed to her about her sexual activities, she said, "I honestly don't know." Cramps were frequently associated with her menstrual periods. She denied any homosexual or heterosexual experiences. She speaks of having a boy friend who is now in the Navy. The patient said that she never talked to her family or to anyone about sexual matters. Her mother indicated that the patient seemed to be self-conscious about her large breasts.

Previous Illnesses

The patient was taken to a hospital about a year ago because of the "spells." At this time her father felt that prolonged hospitalization was not indicated and the patient was removed from the hospital; however, she was taken to another hospital where she stayed about 3 months. Then she continued to see at home the psychiatrist who had treated her in the hospital; however, she

wanted to change to a "man doctor." For about two months she was able to work, then she had a "spell" at work and was taken to the hospital again. She remained there until the time of her admission to this hospital. Information obtained from the various hospitals indicates that the previous "spells" were in the form of convulsive-like seizures associated with laryngospasm.

Present Illness

When questioned about the onset of her illness, she said, "It didn't have a beginning. I don't know what happened. I just landed in a hospital. I don't know. They tell me I hit my head on the floor during these spells and that my breathing is funny. I have always sort of coughed a lot. Last summer they put me in a hospital. I am so lost on time, I don't know if I am here. It's very strange. It's extremely discouraging being put in hospitals. I get strange ideas. I don't care if I live or not. I was afraid I would jump into the river." According to the patient's mother, the patient's illness started with severe headaches. The patient has been repeatedly hospitalized for observation and has been given numerous laboratory tests of all types.

Mental Examination

Attitude and General Behavior: The patient dresses neatly and is fully cooperative with ward routine. Her facial expression is frequently puzzled. She laughs and makes joking comments concerning the peculiarity of her present situation. She smokes continuously during interviews. Much of the verbal content is concerned with "I don't know," or, "I think so," or "I guess so." She supplies very meager information with regard to her problems and is quite evasive at times. She speaks clearly, but there is a lisp. Her verbal productions are coherent and relevant. There is a certain defensive affect in the patient's behavior and verbal productions. It is as if she were completely querulous about everything that is happening to her. She has an air of brooding quietness, which is occasionally pierced by a flippant remark or smile. Repeatedly she says that she does not know how she feels and denies that she has feelings of any kind. There has been no evidence of any bizarre content. She frequently complains of headaches. On one occasion in the ward she had what was described as an hysterical convulsive seizure. There has been no evidence of any hallucinatory content. The patient appears to be of at least average intelligence, although functioning at an impaired level. She attends well to questions but she is not able to concentrate for any length of time. She seems somewhat self-absorbed and preoccupied. She is able to sustain a conversation reasonably well and has a normal flexibility. She is precisely oriented. There is no evidence of any gross memory defect, although she has difficulty in the exact recollection of the events of the past year. Insight and Judgment: The patient has very limited insight into the nature of her problem. She uses psychiatric terms somewhat freely and seems to be en-

tangled in a confusion of psychiatric thoughts and techniques. When inquiry was made as to whether she thought she was ill, she said, "I think my thoughts are quite a bit jumbled. When I try to figure out how I feel about something, then I get all jumbled up."

Physical Examination

There were no findings indicative of organic central system disease. There was an impairment of pain sensation over the entire body with no evidence of pattern according to nerve distribution. The findings could adequately be explained on an hysterical basis. All the routine laboratory examinations have been within normal limits.

Tentative Diagnosis

Hysterical reaction in an immature appearing young girl.

Psychological Evaluation

Three interviews were held with the patient, and the following psychological tests were administered:

Wechsler-Bellevue Intelligence Scale
Rorschach Method of Personality Diagnosis
Thematic Apperception Test

The patient was pleasant and cooperative. She talked spontaneously, telling briefly of her previous hospitalizations and complaining mildly of the lack of privileges here. She chain-smoked most of the time. While she showed some interest in the Wechsler and the Rorschach, she actively disliked the TAT, apparently because she found she couldn't "go beyond the picture" to make up endings for the stories.

Results

The Wechsler places her in the group of bright normal intelligence, and she performs fairly consistently at this level. However, many of her answers are slipshod. She frequently gives quick associations, and only when questioned does she supply more adequate information. This kind of behavior is also seen on the Digit and Arithmetic tests, where she was very unwilling to make any effort. She shows good comprehension of what is expected and when interested works well and quickly. She was able to visualize the performance problems easily. An unusual response was given to Picture Completion. When asked what was missing on the profile view of a man's head (ear missing), a picture which is frequently criticized because the lips look as if they were lipsticked, she first said, "The woman's lips."

Eighty responses were given to the Rorschach. These were generally produced in a flat tone, as if she were naming off various items, and there was very little accompanying description or elaboration. While the number and variety of associations bespeak good intelligence, she actually cannot make

good use of it. There is evidence of deep inferiority and insecurity feelings and of anxiety. These are apparently a cause of the mild constriction seen, for she tends to be stereotyped and hemmed in. She also tends to be concrete and exhibits very little ability to visualize the over-all. Frequently she becomes engrossed in inconsequentials. All of these signs of anxiety and constriction are most clearly seen on the color cards, indicating her disturbance in emotional situations.

While she thus shows her awareness of emotional stimulation, she is not able to express much emotion directly. When she does (on the test almost reluctantly), the emotion is overpowering and completely blots out intellectual control. There is other evidence of regressive affect, again not communicated directly. She usually does not permit herself to react, but when she does, the affect is too strong; she is overwhelmed by it. Also, she shows very little inner creativeness or fantasy. What little she has is mostly very immature, wish-fulfilling.

This sort of constriction, both intellectual and emotional, although it is evidence of pathology, serves also as a form of guarding, of protecting her from more serious impairment and from presenting a less integrated, superficial picture to others. Ego strength, however, is at the lower limit; she is just barely able to hold her own and to interpret reality in anything like a healthy fashion. This is also seen in her somewhat reduced capacity for entering into the popular thinking of the group. At times she seems vaguely aware of the conventional response but can't quite accept it. She seems to have strong self-will that probably amounts to negativism.

Because of the commonplaceness of most of her responses, very little can be deduced as to the nature of her conflicts. Oral problems, though, are indicated by the food and breast responses. She also shows sexual conflicts and preoccupations, although she tried to be matter-of-fact about these responses. Of the four human percepts, three were not differentiated as to sex: the fourth was both male and female, having breasts and a penis, suggesting some doubts as to her own role.

She had considerable difficulty in responding to the TAT. On the whole, she could only describe and give some brief interpretation of the picture. Only with encouragement could she think of what might have led up to the situation, and even then she could rarely figure out any logical reason why the people were doing what they were. Making up an ending was even harder, and she finally gave up trying. As a result, many of the "stories" are rather confused, with the themes changing for little or no reason. As she said, "First I say one thing and then just the opposite. This is terrible, terrible."

Part of the problem seems to be that she could not endow the people with much personality—indicating difficulty in identifying with others. Since none of the characters had many feelings or attitudes, it was difficult to explain how they would get into the situations pictured or what the outcome would

be. Here as on the Rorschach, very little emotion is found. There are no strong affective bonds between the characters, and most of the emotion they show is mild—disinterest, smugness, surprise. Where stronger affect is indicated at first, she quickly changes the story. Thus, shock becomes pleased surprise; people feeling grief get over it and "will survive"; a wife, heartbroken because her husband has left her, goes out to have a cup of coffee and think it over. Many such actions are entirely inappropriate and show the lengths she will go to avoid emotionality. Also, the more people there were involved in a story, the more complicated it became; she seems to feel able to deal with others only one at a time.

The only character with whom she apparently could readily identify herself was one who was heartbroken because she was alone. The only solution she could find was to have the girl find someone, possibly a psychiatrist, with whom she could talk. There were two other stories on which she became quite confused. For one, where most people see the man as rebellious and unfaithful, she decided it was the wife who was in love with someone else, though everything pointed to the reverse. Another was about a father and his unfaithful wife or daughter, the problem here being that she could never clearly establish which role the woman was playing. Throughout, she avoided mother-child themes and was very ambivalent about attitudes toward the father, though she seemed somewhat more hostile than friendly.

Summary

This, then, is an immature girl of bright normal endowment, who is too insecure and anxious to make good use of her intelligence. Instead, for safety, she clings to the easy and stereotyped and becomes confused and upset when there are no definite rules to follow. She has few intrapsychic resources, and what little affect she can express directly is overwhelming to her. She shows confusion about her psychosexual role, while, perhaps because of fear, she is but poorly able to identify with others or accept emotional ties of any sort. Although, by guarding, she can maintain some tenuous contact with reality and even attempt a cover-up with intellectual interests, her thinking shows many simple perceptual errors. Although some hysterical features are seen (and the number of anatomical responses may indicate conversion symptoms), the general pattern approaches schizophrenic.

One gets the impression of a deep narcissistic reaction, the patient never having progressed beyond the four- or five-year Oedipal problems. It might be viewed as an hysteria as of that date and she has made no progress since. The prognosis is poor and the likely outcome schizophrenia.

Course in Hospital

The patient gradually began to verbalize somewhat more freely the nature of the quarrels between her parents. However, she sarcastically questioned

the existence of any feeling in herself about all this. Her repeated theme was that she did not understand why she was in the hospital. At this time, hypnotic sessions were attempted in an effort to obtain additional data about the patient's past living. However, the patient blocked severely during these sessions. She spoke of her father's interest in Christian Science, his attempts to convince her in this regard, and her feelings about it. She raised the issue of not wanting to be obligated to her parents.

About a month later the patient became increasingly tense and asked fearfully whether she was really sick, stating that all she wanted to do was to go back to school. She was afraid of "cracking" if she remained in the hospital. She was particularly tense as she spoke about her feelings for one of her former therapists, and the thought that she wanted to kill the therapist became equated with her having committed the act. After one interview, she had an hysterical outburst, stating that she knew she had killed her therapist. She was transferred to a disturbed ward, and further interviews were held while she was in cold wet sheet pack. After a period of one week, the patient seemed better integrated and was transferred back to the admission ward. At this time, she was more able to talk about her relationships with other patients on the ward. During the next two months she became more friendly and talkative and, once again, began describing the events which had taken place in her living with her family. She talked more about her father's stubborn, angry silences and his apparent lack of awareness of what really went on in the family. The patient adjusted well to ward routine and was transferred to the open ward. Again, she spoke of feeling that she did not need treatment in the hospital.

She has lately begun writing down some of her thoughts in a notebook and has brought these in to the therapist for him to read. The plan of treatment at this time is to utilize any of the material which the patient presents and her feeling about it in relation to her family's attitudes. It can be pointed out to her that the attitudes of her family in regard to many issues are markedly different from attitudes which are held in acceptance by most other people.

It is expected that she will go through further periods of marked anxiety as she becomes aware of some of her angry feelings.

It is evident that the case presented is not a classical one with regard to diagnosis. Attention is first directed to the headaches, laryngospasm, and convulsive seizures and the possibility that they might be explained by some central nervous system disorder. No such disturbance was uncovered, and the clinical staff took the position that the reaction was an hysterical one. The psychological examination elicited some material that suggested hysteria but the results seemed even more to indicate a schizophrenic reaction. It is interesting to note that the first mention of schizophrenia is turned up in the psychological evaluation. The later course in the hospital has tended to sub-

stantiate this impression and the emergence of a schizophrenic reaction now seems evident.

CASE II. Female, Age 33, Married, Housewife

Psychological Evaluation

The patient was seen before the history had been obtained, and consequently the evaluation is made on the basis of three interviews and the administering of the following psychological tests:

Wechsler-Bellevue Intelligence Scale
Rorschach Method of Personality Diagnosis
Thematic Apperception Test

General Behavior

Patient was entirely cooperative to testing, although she almost insisted that the results prove that she was in good contact, able to see clearly, and capable of handling situations normally. She frequently asked for encouragement but tended to interpret such as the proof she sought. She disliked admitting that she did not know something, preferring to say she had forgotten. It is somewhat hard for her consciously to project; she likes to have things definite and clear, so there is less chance for her to make a mistake. She was friendly throughout, though she thought some requests were rather unreasonable; and on the last day she said she had enjoyed the tests, finding them less difficult than she had anticipated.

Results

According to the Wechsler, the patient's intellectual functioning is high, bright normal to superior. Her Verbal scores are definitely the better, although she occasionally misses easy questions, usually because of carelessness. Her Performance scores are consistently below the Verbal (Verbal IQ Score is 129, Performance 106, Total 119). On some tests this seems to be caused mainly by some slowing up; *i.e.*, she is able to handle the problem but loses credits because of slowness. On others, however, there is a tendency to overlook the essential, an inability to visualize clearly the whole-part relationship. Her over-all inconsistencies are not typical of the changes found with increasing age or organic loss, they are more in line with the preserved verbal capacities but slowed and concrete performance abilities found in non-deteriorated schizophrenics, particularly paranoids.

The Rorschach shows the effect of a long-standing illness that curtails the best use of her potentials. Evidently, she has more or less solidified at this level; there are no signs of undue anxiety or active conflict. She seems to be set in her present pattern, resisting further impairment but not inclined to attempt a better solution.

While the protocol shows the signs of good endowment in her high productivity, in some originality, and in the type of responses, she clearly is not able to use her intelligence effectively. For one thing, she is overly stereotyped; too much of her thinking is on the easiest, most common level. While this permits her to seem more in contact with other people, it also reflects a narrowing of interest to little beyond the most obvious. Similarly, she is rather concrete. She shows a lessened ability to grasp new relationships or to generalize and see the over-all picture. Frequently, she becomes lost in minor details, attending to things that most people consider inconsequential. Some of this is because of a lack of energy, some because of an attempt to place herself where she cannot be compared with others, to avoid possible unfavorable comparison. More serious is the complete absence of any inner creativeness. There is no inner living, no impetus from within; she is dependent on the environment for stimulation and must direct all her energy outward. There is also a lessening of affect. While she is still capable of establishing some rapport with others, as well as occasionally having mild impulsive outbursts, there is generally little emotional energy displayed. Despite some capacity for empathy, there is a strong trend toward egocentricity, which is accompanied by her lack of interest in other people.

Ego strength is just below the critical limits for the healthy, although she certainly displays no gross deterioration. She does not accept reality in a normal fashion. Some of her deviations are because of her superior abilities and originality; more, however, are impersonal errors, stemming from uncritical thinking rather than from personal conflicts. In fact, there is little evidence of acute problems now or of much anxiety. She is better able to maintain control in anxiety-arousing situations than when under emotional bombardment and admits that the emotional elements confuse her. She does not interpret the world as normal people do, and she shows little acceptance of conventional thinking. This roughly corresponds to a weak superego, since she is disregarding the popular thinking that is generally incorporated into superego functioning. There also appears some tendency to seek special meanings in her percepts. Because of the blandness of the record, little can be interpreted about her problems. She shows oral tendencies, and there may be a great deal of disturbance in her relations to other women (basically to her mother). Her uneven and uncritical behavior is mostly like that of a schizophrenic. In the fact that she can maintain some sort of peripheral control and resist deterioration, as well as in her general pattern of responding, she appears like the paranoids; but she does not have the capacity to build up an elaborate delusional system and maintain it in a classical paranoid fashion.

Her Thematic Apperception Test stories are quite stereotyped and are limited by her refusal to project except where she can see and interpret all of the characters' facial features. Here, too, she must be sure before she

attempts anything. The most recurrent theme is that of a wife-husband-hussy triangle. Since the wife is usually "the lovelier person" and also physically attractive to the husband, she is able to keep the man. No reason is ever given why the husband should stray from home if his wife is so good, although this may be just a normal male trait, since she does not endow the male characters with any admirable personalities. She is similarly derogatory of most women, calling them "weak sisters" when they give in to sex or when they simply accept a philandering husband and reviling those who lead men astray. "Nice girls" do none of these things. Three other stories seem to uncover some hostility toward her parents, although on the surface she says she wants to do nothing to upset them. The rest of the themes are fairly nondiscriminatory. It is interesting, however, to note that several times she rejects the popular interpretation and then devises one of her own. In general, while she requires prodding, she is able to produce fairly integrated stories.

Summary

All the tests reveal superior intellectual endowment; yet the best use of this is curtailed by the effects of a long-standing mental illness. Ego strength is low, but she is able to hide this to some extent by seeking contact with others through stereotypy. Basically, she has little regard for other people or for conventions. She is suspicious of other people and attributes few honorable traits to them. Inner resources are quite severely limited. In general, the picture is most like that of paranoid schizophrenia. It is doubtful that she will ever be able to change. She has no inner creativeness, there are no signs of active conflict, anxiety, or attempts to face her basic problems. On the other hand, she seems well stabilized at this level. She retains some capacity for peripheral contact with reality, she adequately resists further impairment and disorganization, and she is able to find some satisfaction in her intellectual powers, her originality, and her high productivity.

Main Facts

The patient is a 33-year-old woman who has been hospitalized 4 times in the last 6 years. She has suffered from a paranoid type of illness and has presented a definite character disorder throughout her whole life.

Family History

The patient's father had a nervous breakdown at 56. He is still living. The mother suffered from a mild depression during the menopause. She is now 51, but looks only slightly older than the patient. The father had been married previously, and there is one half-sister. There are 2 siblings, both seeming to get along well although the brother has been described as being a difficult personality.

Personal History and Present Illness

The patient's birth was difficult and instrumental. She was nursed at the breast for about 2 years. During her second summer she became sick and has never really been healthy. She seemed to get on fairly well with children when small, but later it was obvious that she did not mix well. She was very domineering. In school she received good marks without working hard. Patient had 2 tonsillectomies and influenza in one year. At 17 she decided to specialize in music and went to New York to study the violin. Her teacher required her to practice for 3 hours a day, and she soon began having hysterical crying spells and insomnia and after 3 months returned home.

The patient married at 22 a man 12 years her senior. Sexual adjustment was unsatisfactory. She was not happy with her husband's friends, felt she was not welcome, and preferred younger people. She has always been somewhat shy and self-conscious.

Six years ago, she had what is called a "slight nervous breakdown" characterized by insomnia. She felt at this time that people were antagonistic toward her and she became unhappy about remaining in her home town. She was treated in Baltimore but with only slight improvement. She brooded over her inadequate sex adjustment, felt she was not having sufficient orgasm. Then she became pregnant and induced at six weeks an abortion, which did not seem to cause any conflict. Shortly after this she complained that the servants were talking about her. She thought they said that her husband entertained a mistress in their apartment while she was away. These symptoms gradually diminished and she took an interest in their new home. However, with the recurrence of increased responsibilities, she again noted that people talked about her, misinterpreted remarks, felt that the scandal about her husband had spread all over town. She avoided answering the telephone lest it be someone who suspected her husband's integrity. On several occasions she had violent temper tantrums, throwing herself on the floor and making the evenings intolerable for her husband.

A few months later she was admitted to a hospital where she remained for only eight days. She refused to stay, went back to her husband, became upset again, and was readmitted to the hospital. She was at that time considerably concerned about the talk about her husband, decided that she wanted to divorce him, and go on a world cruise, hoping to find a rich man to marry. She was extremely difficult to handle at the hospital and was constantly trying to force her environment into giving her her own way. She was quite demanding and frequently threatened to leave the hospital, turning in three-day notices rather often. Finally she left with only superficial gain. On her return home, after a trip to the seashore, she seemed better for a time, but again became sensitive that the servants were talking about her and had periods when she wept loudly. Finally she decided to go to live in an apartment with her

mother. She spoke, during this time, of suicide and said that she would not be responsible for her mother's life if she continued to stay with her.

Since this time she has been in and out of hospitals and has never been able to make a satisfactory adjustment. She claims that she has been unnecessarily tortured and discriminated against. Constantly she thinks that other patients are talking about her and threatening her, and the paranoid trend has become more and more obvious. Sometimes she makes odd, bizarre gestures with her hands. She is extremely careful to see that her door is closed and often lowers her voice and looks about the room to make certain that no one is eavesdropping. She continues to evidence paranoid thoughts about practically everyone in her environment.

In her periods outside of the hospital she has engaged in a number of bizarre episodes. Twice she has made elaborate plans and spent great sums of money on a wardrobe in schemes to find a wealthy husband. She has barricaded herself in hotel rooms and in the toilet of a service station, making it necessary to break down doors to get her out.

When hospitalized, she engages in all kinds of schemes, attempting to bribe the personnel and writing letters to lawyers and politicians. She is still suspicious of the hospital, feels that she is being held here by a gang of crooks, and shows no tendency to give up her systematizations.

CASE III. Male, Age 21, Single, Student, Protestant

Psychological Evaluation

The psychological evaluation was made directly after the patient's admission to the hospital and before the history had been assembled. The following psychological tests were administered:

Wechsler-Bellevue
Rorschach
Thematic Apperception
Draw a Person

General Behavior

The patient was never comfortable enough during testing to relax, but he was fully cooperative. While at times he became completely absorbed in a task, such as composing stories for the TAT, there was a marked tightening up as soon as a story was completed; he offered little information spontaneously. However, he did say he enjoyed the TAT both because he liked to use his imagination and because it was gratifying to be able to create a story rather easily now, whereas in school this had been difficult.

Results

He is of about bright normal intelligence, and his Verbal abilities are somewhat better than Performance. While general information seems good and

there is no constriction of output, he usually is quite cautious, concentrating on the more familiar, practical, and concrete, and is rather stereotyped in his approach. Abstracting and reorganizing are at a high level, but he tends to be slow in shifting from an unsuccessful method of attack, though usually his approach to problems is good. Because of his good ability, it seems apparent that insecurity and fear are preventing him from trying anything new, from going beyond the protective confines of the most common and definite. He shows good social reasoning, but mainly in the abstract; if he feels himself directly involved, especially on moral issues, his thinking is less clear. His conflicts and need to protect himself partially blind him to the larger implications. He may also have some need not to see what is going on, particularly when he is in an unfamiliar situation where he cannot function automatically according to hard and fast rules.

His cautiousness imposes on his perception a constricting force sufficient to confine him to safe ground so that much of his routine functioning probably seems realistic. However, some of his perceptions are very poor, uncritical, and border on confusion. At times, too, he is unable to separate the various elements of his percepts and arrives at a very contaminated response. These productions are all typically schizophrenic. Ego strength, while low, is still high enough to show that he is able to make some effort to hang on to reality.

He is a markedly introversive person. While there is some affect, enough to establish some sort of emotional rapport with others, most of his energy is turned inward. He feels himself to be an awkward, clumsy person, and it is these introversive trends that help make him so. His main way of understanding others is to project his own feeling to them. This was most clearly seen on the TAT where he often identified with each character in turn rather than with just one central figure. Since he does not know himself well to begin with, it is hard for him to understand other people, a situation which leaves him feeling frequently that others are somewhat hidden from him, inexplicable. (This, though, may also be in part a projection, for with his insecurity, he can be quite evasive himself.) In any event it is difficult for him to communicate with others. He apparently does not see himself as a strong person. He would like to be self-sufficient but usually feels the need to have someone else nearby, someone with whom he can share his problems even if he does not completely depend on the person. While he is not always passively resigned or dependent on others, he seems to hope that "fate" somehow will make important decisions for him, thus absolving him from the possibility of doing the wrong thing. Because he has considerable pent-up hostility, he may fear that if left to himself, he might do the "wrong thing"—something aggressive or antisocial. It is the fear of his underlying hostility which elicits the most denial and anxiety.

Many of his conflicts seem to center around his relationships with his

family. One facet of this is his desire to break away from the family, which he may see in some respects as trying to control and dominate him, and in other respects as misunderstanding him, causing his feelings of insecurity and frustrations. On the other hand, he may also feel that it would not be right to leave the family, that somehow he could try to adjust himself and his ambitions to the family plans, letting his dreams be an extra source of satisfaction and comfort. It is difficult for him to express hostility toward his parents; in the TAT stories the only way he can do this is to call the parental figures "foster parents." The most danger lies in the Oedipal situation, and any attempt to seek his mother must result in dire punishment, death, either for himself or his father. He, perhaps vaguely, feels that maturity (which he sees as self-sufficiency and adult sexuality) would remove this problem. In this connection there is a strong probability that adult sexuality means the absence of any homosexual leanings.

Summary

The patient, then, appears as a markedly introversive person of bright normal intellectual abilities. He has difficulty in communicating with others and feels insecure and awkward. Because of his fears he tends to stick to the concrete and familiar and to postpone decisions in the hope that circumstances will provide an answer. His underlying hostility produces anxiety. Oedipal problems and their dangers are clearly shown. While his thinking is frequently schizophrenic in nature, he manages to maintain a toehold on reality as well as just enough affect to permit some rapport with others.

Main Facts

The patient is a young college student who has become withdrawn and unresponsive and talks about "ending it all." He complains of having no feeling, of being empty emotionally, and says "otherwise there is nothing wrong with me except the things I have done to people, insulted them and used them. I've just been building up lies and deceits and it came to a point where I did not know how to get out of it. I'm scared—in my mind."

History

Both the paternal and maternal grandparents showed some instability in adjusting to family life, and the maternal grandmother committed suicide.

In the patient's own life there has been no stability of family. The parents separated from each other several times, and the mother was hospitalized frequently for alcoholism and drug addiction. She was artistically inclined, never successful, greatly frustrated, and finally committed suicide. The father, though successful in business, has never been able to get to know his children.

The patient is the younger of two boys, and the relationship between the

two boys appears to be the only healthy relationship in the family. The home was always being broken up by the father's trips and the mother's hospitalizations, and the boys have lived at one time with the father, another time with the mother, and at various times in the homes of each of the grandparents. Adjustment to school has been difficult, and the patient has been in three different colleges. The father seems to have no intimate knowledge of the boy's life, and it has been practically impossible, therefore, to obtain a satisfactory history.

Last year at college the patient became more withdrawn than usual and was described as being seclusive and repressed. He asked for his Bible and his mother's picture and sat gazing ahead as if in a trance. He told his friends that he was sorry for all of the terrible things he had done and that he was going to end it all. He appeared to be preoccupied with events of his past and showed more and more blocking until it was necessary for him to be hospitalized.

At the time of his admission he was preoccupied and withdrawn. He at times appeared to be flattened emotionally, at times anxious, and at times on the verge of tears. He showed no evidence of flight of ideas, circumstantiality, neologisms, or peculiar grammatical constructions. There was no hostility exhibited or admitted. He was extremely self-abusive and talked vaguely about his wrongdoings At times he seemed preoccupied and could have been hallucinating, but he did not admit to such. He seemed quite confused in terms of his extremely self-critical appraisal and wandered off into autistic preoccupations.

The physical and laboratory examinations were negative.

Course in the Hospital

The patient became blocked and uncommunicative and mute, but was occasionally overactive, screaming, "This is the end, I'm poisoned, etc." He was given an amytal interview in which he accused himself of being homosexual and of giving syphilis to a boy with whom he had had homosexual contact. A diagnosis of catatonic schizophrenia was made, and he was given narcosis therapy. After three weeks of this treatment he emerged in a distracted state and appeared to be years older. He has recently, however, begun to be able to accept some responsibility and feels more self-confident than he has ever felt in his life. He is now participating in a psychotherapeutic program and is acting out many of his personal difficulties in a somewhat promising manner.

CASE IV. Male, Age 39, Married, Salesman, High School Education, Protestant

Psychological Evaluation

The psychological evaluation was made directly after the patient's admission to the hospital. The following tests were administered.

Wechsler-Bellevue
Rorschach
Thematic Apperception
Draw a Person

General Behavior

The patient was very friendly and cooperative In general, he worked well on the tests and had very little difficulty in handling the items. However, he said that he always felt tense and unable to answer questions correctly in a test situation (such as here or in school), and would even forget answers that he usually knew. He did show some tenseness at times; but usually if he felt he could not answer a problem, he preferred not to bother to try to work it out. Giving up did not seem to disturb him.

Results

He seems to be of high, bright normal intelligence, full IQ score being 115. His Verbal score is only average, but this is because of his poor performance on Digits and Arithmetic. It appeared less that attention and concentrating powers were poor than that he did not care to make the effort. In much the same fashion, he was content to give haphazard answers unless pressed to be more explicit. He did much better on the Performance section where he was quite observant, generally quick in responding, and able to use trial and error behavior when necessary without repeating errors. Because of the way he seemed to use his intelligence, it is felt that he does not work well under pressure or when others are observing. He may try to take the easy way out, though if he is interested, he can show persistence.

While he is not using his intellectual potentials to the fullest, neither have they been drastically curtailed. His thinking is only slightly stereotyped, although he apparently does not have many outside interests. He is capable of abstract thinking; in fact he seems to prefer giving a glib general percept rather than expending more energy to account for even some of the significant details. He appears generally passive and unwilling to do much more than what is necessary to put up a fairly good front.

Behind this front, however, he is capable of some very strange thinking, which includes contaminations and rather bizarre abstractions. On one card, where most people see two humans and where he himself, on one level, apparently sees two "worthless sons," he insists he sees literally only two black sheep. On another card, popularly interpreted as a bat, he sees something feminine and tries to deny it is anything unpleasant, while he also says, "I don't want to say anything bad about [women]; I've always liked the fair sex." In addition to the usual thought processes which form such percepts, both responses hint at deep problems in interpersonal relationships. Bearing this out, his one human response is of two men at a bar—"You'd think they

were the best of pals, they're kidding themselves that they're enjoying themselves, but they probably hate each other, as though they'd cut each other's throats." He shows a good deal of such underlying hostility, but he tends to disclaim this and any other strong emotion as not being part of himself; rather it is the work of the devil, of Old Nick himself. He also dislikes and fears anything powerful and authoritarian, again attributes of the devil. He apparently has enough control to try for some mature emotionality. Yet, should his protective, passive cover-up ever fail, he could explode violently against his environment, for his fantasy, good as it is, is not adequate to drain off the emotional energy.

The test thus points out many areas of conflict: the unacceptable hostility. the fear of power and authority, his religious attitudes, and whatever he means by "Old Nick," his poor relationships with other people.

The DAP test elaborates this by indicating strong latent homosexuality and possibly complete inability to identify himself with adult males. (He draws a young lady and a 9-year-old boy, both of whom have identical faces.) The female has little shape and close-cropped hair; he apparently has no interest in strongly sexual women. The treatment of the noses, hands feet, the gun the boy has, and the vagueness of the body lines all probably signify a fear of the body (sex). The pictures, too, seem to show a person who uses a petty, conforming, intellectualized manner to hide his conflicts.

The TAT stories were well organized, and he was able to tell them easily Most of the stories centered around a few themes. Here, too, none of the characters showed strong emotion. Even married couples who were in love with each other did not have a love strong enough to withstand the temptations of the devil ("he doesn't like to see people happy") or the mutual understanding to keep from repeatedly boring (the patient) or being bored (his wife) by each other. In these stories, the parents emerge as important figures They are described as demanding, smug, selfish of their children, interfering, and—the father, at least—materialistic. It is only in relation to the parents that any of the people show some self-will, for they never give in to the parents' wishes, though occasionally they may do the minimum necessary to satisfy the parent while not denying their own desires. The most significant story in this group is of "a young man who is very well liked by a jealous old man who has some kind of fascination for the boy. Although this older man is probably bad (he likes to be looked on as a tin god) the boy will awaken to reality, come out of his influence." He is also the person to whom the boy turns for comfort and security. The attitudes in this story are extremely ambivalent and are probably those he has toward his father.

Other stories deny his need for close companionship, and in one he apparently tries to say that faith in God antagonizes the sinful but protects one from evil. None of the stories are particularly happy. Throughout, the char-

acters get into rather uncomfortable situations but never make any effort to work out a satisfactory solution. Rather, they let the same situation be repeated over and over, never admitting they don't like it.

Summary

This, then, is a man of bright normal intelligence who doesn't make the best use of his potentials but is content just to get by He retains enough integration to present a somewhat adequate, though very passive, appearance, but under this, there is estranged thinking, schizophrenic in nature. Unacceptable hostility, which may be largely directed toward parental authority, unusual religious ideas, poor ability to establish good relationships with others, the absence of deep emotional bonds, and strong latent homosexual components round out the picture. Although he might offer some material with which to work, it is felt that, as long as he can retain as much integration as he does and as long as his environment will tolerate him, it is perhaps better for him to continue to use his present defenses, for there is the danger of much more disorganized and violent schizophrenic behavior.

Main Facts

Patient was admitted to the hospital because of tension, nervousness, sleeplessness, and heavy drinking.

History

There are no psychiatric determinants in the family although both grandfathers were described as heavy drinkers The father is a successful self-made business engineer who is said to be temperamental, high strung, and demanding. The mother died when the patient was 3 months old, and the patient was cared for by a paternal aunt. The patient never got along with his father and says that he "hates his father's guts." He had, however, worked for his father until 4 years ago. When the patient married, he stopped working for his father and was content to let his wife support him while he stayed home and cared for the house. He has been a heavy drinker for several years and finally became so restless and difficult to deal with that he had to be hospitalized.

Course in the Hospital

A diagnosis of simple schizophrenia was made, and the patient adjusted very rapidly to hospital life. He showed no concern whatever about being in a mental institution and was extremely pleasant and cheerful. The sick people about him did not upset him. He went around the ward in his robe (like a prize fighter) shaking hands, smiling, and introducing himself. He gained no insight whatever into his problems and seemed to be well on his way to becoming a permanent hospital citizen when his father abruptly withdrew him from the hospital.

In general, this appeared to be a case of a simple schizophrenic who has been able to get around up to the present time, first under the protection of his father and later with the support of his wife. He showed little concern about the whole situation and started to drink because he had nothing else to do. His brief sojourn at the hospital was a repetition of his long-standing life pattern. He was unconcerned about being in a mental hospital as long as someone was paying the bills and some of his needs were fufilled.

Discussion

The last three cases were selected at random from a group of cases in which the psychological evaluations were made before any history of the patient's problems were available to the clinician The general diagnostic evaluations were, for the most part, in agreement with the later case formulations by the clinical staff. In the first of these cases the final diagnosis of paranoid schizophrenia was indicated in the psychological evaluation as was the fact that the illness was long standing. In the second of the cases the staff diagnosis was catatonic schizophrenia, and the patient is responding to treatment. The psychological review indicated that the patient was manifesting a schizophrenic-like reaction and called attention to the "toehold on reality" as a relatively good prognostic sign. The psychological evaluation also called attention to the possible homosexual factor which became evident in the course of treatment. Similarly, in the last case the psychological study and the staff formulation are in agreement with regard to diagnosis. The guarded position taken in the psychological report with regard to prognosis could not be tested since the patient did not remain in the hospital for treatment.

The more detailed statements regarding personality dynamics as they are reported in the psychological evaluation may appear to be expansive and this may actually be true. The evaluations are subject to some of the same possibilities of error that may occur in the regular interview between patient and therapist. In each instance, however, two clinicians reviewed the examiner's test results and the final report includes only those findings in which the clinicians were in agreement. It must be fully recognized that such personality evaluations in no way approach the reliability of the available physical diagnostic tests and procedures. However, the evaluations did, in each instance, provide many hypotheses regarding the patient's intellectual capacity, the ability to use the intelligence, the ego strength, the drives, conflicts, emotions and defenses, and the patient's manner of dealing with himself and his world. These hypotheses proved to be valuable in the determination of the therapeutic approach.

The last case is presented in greater detail in order to provide a better picture of the wealth of material that is developed in a clinical study.

CASE V. Male, Age 25, Married, Protestant, College education, Garageman

Main Facts

Always subject to severe headaches, the patient has gone through a period characterized by attacks of even more intense headaches sharply localized to the left side of the head and associated with extreme excitement. These attacks have followed an illness of five days' duration, which was diagnosed as an acute encephalitis.

Family History

The father, a railroad brakeman, is living and well at 47. Five years ago he had a nervous breakdown. He had been quite tense and excitable since a freight wreck two years previously in which his train had been thrown off the track. He first became weak, easily fatigued, fearful when out with people, and complained of constant headaches. His hair fell out completely, and his weight, which is now 152 pounds, fell to 108. He did not receive medical treatment but stayed at home with his wife for a year and a half. Gradually he made a slow improvement and then returned to work. Although shy and reserved, he is usually cheerful in mood. He tends, however, to be somewhat excitable and to worry a great deal. He does not drink alcohol.

The paternal grandfather, a farmer, died at the age of 72. In personality he was stern, strict, exacting, irascible. He grew childish as he grew older, but was not moody. The paternal grandmother is living and well at 86. Calm, cheerful, pleasant, and affectionate, she is not a worrier and is still able to do her own housework.

One paternal great-uncle, now 96, has been a patient in a mental hospital for 45 years. A paternal great-aunt, age 75, has been in another state hospital for 25 years. The informant does not know the nature of the illnesses of either of these two distant relatives of the patient, but does state that he feels they studied too hard and taxed their brains. There is no other history of mental illness in the paternal line, but all seven siblings of the father are nervous, high-strung, tense people, and all of them have severe headaches.

The patient's mother, a stout, cheerful, jolly, easy-going person, is living and well at 45. She is not a worrier, but takes things as they come. She is usually very even-tempered. During the early years of her marriage she worked as a cigar maker, finally stopping when the patient was 18 years old The maternal grandfather, a farmer, died of dropsy at the age of 62. In temperament he was jolly, cheerful, and easy-going. The maternal grandmother died five weeks after her husband at the age of 62. The informant states that she died of a broken heart. She was also cheerful, easy-going, and

affectionate in temperament. There is no history of nervous or mental illness in the maternal line, all members of the family being cheerful, strong, well-adjusted people.

The patient is the only child of his parents He resembles the paternal lines in appearance, in temperament, and in the fact that he has always had headaches.

The mother suffered no difficulties at the time of the patient's birth. She was very well during her pregnancy, labor was easy, and no instruments were used. She returned to her work as a cigar maker two months after the birth of the patient.

Early Development: The patient's development was considered to be normal in every way. He walked and talked at one year and acquired sphincter control early. At nine years he was circumcised because of some infection of the penis, but otherwise he had no operations. Chicken pox was his only childhood disease, and he never had any broken bones. The father describes the patient as having always been a bit shy, but he had many friends. He was a follower in most group activities but a leader in athletic events, in all of which he excelled. As a very young child he had temper tantrums but did not bite his nails or suck his thumb. There is no history of enuresis or night terrors, and no other neuropathic traits are recorded except the frequent severe headaches associated with nausea and vomiting which began when the patient was about 5 or 6 years of age and have continued almost uninterrupted to the present time. No cause was ever found for these and it was assumed that they were of a familial type.

Schooling: Having started school at 6, the patient graduated from high school at 18. In high school his marks were good, and he was an excellent athlete playing on the school baseball and basketball teams. At the end of his second year in college he received a note saying that he had failed to pass one subject and would have to return to summer school in order to make it up. He decided not to return to college, but at the insistence of his childless paternal aunt, who had raised him in his boyhood, he went to live with her and attended a normal school. The informant states that shortly after having made this decision, the patient received another note from college saying that there had been an error, he had not failed, and he could return to school. However, he decided to continue at the normal school and did so for two years. When he stopped, he had completed only the first two years' work with a strictly average record. He did not care very much for studying, but got married and went to work.

Positions: The patient has worked only for his uncle, the husband of his father's sister, who conducts an automobile agency and uses his nephew in both the garage and the salesroom. The patient also conducts a small automobile insurance business of his own on the side. His income is very small but his aunt sees that he gets everything he needs, including free rent in a

house owned by her. Only occasionally has he received financial assistance from his parents. He has no savings account.

Sexual Adjustment: The father states that he never told the patient very much about sex, but imagines that most of the boy's information was obtained from his friends. As a young man he always asked his mother whether the girls he went with were suitable companions for him. Although he did not seem shy with girls, he seldom went out with them. After courting his wife for a year and being engaged for five months, he married her three years ago. The marriage has been a very satisfactory one, according to the wife. They have always been congenial and have had only minor quarrels. Sexual relations have been mutually satisfactory, the wife stating that the patient is very sensible about this. She stated that by sensible she meant that he wanted sexual relations not more than two or three times monthly. There is one child, 17 months, a girl, who was planned for. The patient was not concerned about the possible financial difficulty he might have in caring for the baby. She is a very well adjusted child, and the patient is fond of her.

Personal Description: The patient has never tasted liquor, but he has smoked for several years and now smokes about a package a day. His father is a heavy smoker, but the patient's mother was very much upset when her son began to smoke. The father stated, "He was a good boy before he went to normal school," but when caught up on the statement, he immediately said that the patient was still a good boy and that he meant only that the smoking had distressed the mother very much. The patient does not take any medicine regularly except Anacin, which he takes for his headaches. He is described as usually cheerful, jolly, and easy-going, taking things as they come and almost never worrying. Although he is quiet and a bit reserved in company, he has numerous friends and is extremely courteous. He is very much interested in games and is a member of a local baseball team. An excellent ballplayer, he has on several occasions had the highest batting average in the small league in which he plays and is almost always among the first three or four in batting. He particularly enjoys radio programs, but reads only infrequently. Although he attends the Reformed Church regularly and is a member, he is not particularly devout.

Present Illness

Possibly related to the present illness are the severe headaches which the patient has had at irregular intervals from early childhood. During his attacks he would become nauseated, and would vomit, and would need to lie very quietly. Medication ocasionally afforded some relief, but the best cure of all seemed to be sleep for an hour or so. The patient would awaken from the sleep with a ravenous appetite. These headaches were never constant in distribution, and they never appeared to affect his vision. Four years ago the patient was hit on the back of the head by a baseball. He was unconscious

for 30 minutes and had a slight concussion. However, after a few weeks he recovered completely, and since that time his periodic headaches appear to have decreased somewhat in intensity and frequency. Although previously they had come as often as twice monthly, they now decreased to one every six to eight weeks.

Recently he came home for luncheon one afternoon, telling his wife that he did not feel well. He was quite chilly and felt vaguely uncomfortable. These symptoms grew worse during the afternoon. After supper the patient lay down in bed for a while because he felt faint, and on trying to get up, he fell face forward, unconscious. His face was flushed, and he did not regain consciousness for 15 minutes. The physician, finding the patient's throat red and noting a moderate fever, made a diagnosis of grippe and advised that the patient remain in bed for a while. The patient himself complained of extreme thirst, severe pains in his eyes, and a terrific ache in the back of his head. The latter was so severe that he asked his wife to hit the back of his head. During the night he became delirious, restless, and began to talk irrationally. He seemed to be preoccupied with the war and cried when he spoke of innocent children being killed. Finally he tossed and twisted about so much that it took six men to hold him in bed. He was then taken in an ambulance to the hospital where he was given a spinal tap to relieve the pressure. While he was in the hospital for five days, he felt very well except for headaches which occurred when he sat up.

He was returned home, but three days afterward, a week after the onset of his illness, he again complained of a peculiar feeling. This experience occurred in the evening after supper. He was nauseated and had a severe frontal headache on the left side. In a few moments he began to talk irrationally. He thought that he was on a ranch, that he was a cowboy fighting a group of Indians. He would carry on a conversation with people in his environment if they adopted a role in his hallucinatory experience and delusional belief, but would not recognize them as real people. After an hour or so, the patient snapped out of this type of behavior. Then he felt ravenous. He said that he had had a terrific headache, but recalled no further details of the incidents which had just occurred. He was taken to another hospital and placed under the care of Dr. X, who trephined the skull and made a ventriculogram. The findings were normal, but the patient became quite ill after the diagnostic procedure had been carried out. He began to suffer with severe headaches and his hair, which had been shaved off before the ventriculography, fell out as soon as it grew.

A few days after the examination had been completed, he began to complain once more of the severe headaches which had preceded his irrational behavior. He was put on a strict diet of pears, rice, carrots, potatoes, and crackers, and on this got along well until New Year's evening. On that day fish and pineapple were added to the diet. A little later the patient com-

plained of nausea and of a severe left frontal headache which radiated down the left side of his face. Once more he became irrational. He began to talk of being Tarzan and expressed a fear that someone was after his little girl. He spoke of what a wonderful little girl she was and what a fine mother she had. Becoming progressively more excited, he stated that he saw Indians attempting to attack him. Repeated attacks of this sort lasted for an hour or two. During this period the patient was more difficult to control, but as soon as he would fall asleep, all would be well. He would awaken with no memory of anything but the headache. He would eat a hearty meal and then go along very well until the next headache occurred. The doctor found that by giving the patient a sedative the moment he began to complain of the headache, it was sometimes possible to send him off to sleep before the excitement occurred. The sedatives used were phenobarbital and nembutal. In spite of this sedation, however, the patient continued to have attacks every few days. During these attacks, it was necessary to tie him in bed, for he seemed to be possessed of almost superhuman strength. Sometimes he misidentified people with whom he had previously been friendly. He often thought they were enemies of his, but on occasion would not feel they were hostile. Once he thought that another patient was a horse. He went through the motions of putting a saddle on this person and then rode around the hospital on his back. The other patient humored him, and the two apparently had an excellent time. A diagnosis of postencephalitic psychosis was made, and since the patient did not appear to improve, he was transferred to this hospital for treatment. On one occasion the patient was apparently blind for about 12 hours. His sight is said to have returned when one of the nurses pressed firmly over the orbits.

Mental Examination

1. Attitude and General Behavior: The patient greeted the physician pleasantly when he entered the office. He appeared slightly shy and retiring, but seated himself comfortably in a chair where he remained throughout the entire interview. Growing more comfortable as the interview progressed, he showed no signs of abnormal activity, and his attitude was appropriate to the content of his remarks.

2. Stream of Mental Activity: The patient spoke in a very high-pitched, somewhat effeminate voice. His enunciation was clear, his diction good. He spoke spontaneously and freely about his past experiences and seemed anxious to discover the possible reasons for his illness. There were no abnormalities of speech and no evidence of blocking or scattering.

3. Emotional Reaction: Affect and Mood: The patient said that although he had at times felt depressed, he was feeling very well indeed at the moment. He liked the hospital and expected that he would be able to get well here. He reported no particular mood swings during the present illness, but he has

noticed some slight impairment of his powers of concentration and memory. Sleep, too, has been somewhat disturbed, chiefly because he has felt rather lonely for his wife and child and has not particularly enjoyed being in the hospital and having so many diagnostic procedures carried out upon his person. All in all he felt that his mood was pretty good, considering the fact that he has been through a very distressing illness and has not been able to work for almost seven weeks.

4. Mental Trend: Content of Thought: The patient started the story of his present illness by presenting events mentioned by the informants who gave the history of the present illness. He described, in addition, the fact that he had felt extremely chilly throughout the day which preceded his first attack of unconsciousness. He had shut himself up in a car, turning the heater on in an attempt to warm up but even this did not help him. Toward evening on the day of his illness, he began to feel nauseated, dizzy, and uncomfortable. These feelings increased until he had a marked generalized malaise, and then he finally lost consciousness in the manner described by his wife. Since then the patient has had severe throbbing headaches which start in the left frontal region and then radiate down the left side of his face. These have been much more intense than the headaches which he has had regularly since his early childhood. These early headaches were much milder in character and were distributed all over his head, going from one place to another on different occasions. They have been associated with nausea and vomiting, much more intense than that which accompanies his present illness. The patient has always considered that these constantly appearing headaches are more or less familial in character. His father has always had severe headaches, on one occasion so bad that he had to lie on the floor and in his threshing about, rolled himself up in a rug. Each of the father's seven siblings has similar headaches, and during the father's breakdown three years ago he, too, lost all his hair in the manner that the patient did during this present illness. With the present attacks, he gets a feeling that he wants to go to sleep. If he can get to sleep, everything is well. If he is kept awake, however, the pain increases, he become irritable, and he feels as though people are tormenting him. He does not get so angry that he would care to harm anyone, but he does grab some piece of furniture about him and hold it very tightly. As the attack finally wears off, he feels tremendously hungry. This, he says, is the one way in which these headaches differ from his father's; he is simply ravenous. He would eat anything at all. He feels as though he has had nothing to eat for a day or two.

The physician turned the discussion from the headaches to the patient's mood swings. The patient said, "Since I first went to college, I have been getting blues quite often. I guess they started there because I had built up a picture of college life that just wasn't true. I had imagined it was going to be a lot of fun and when I got there it seemed to be just about the same as

regular school. Right now I guess people give me the blues about as much as anything. I have a feeling that if I could just go away, I'd get O.K. I just want to get away from people all the time." Asked whether this was related to feelings of irritation or anger at people, at his wife, for example, the patient replied, "I don't get really angry at people or have arguments with them. I just walk out on my wife instead of arguing with her. If I would argue, I'd lose my temper. I might strike her or something like that. I don't want you to get the idea I don't love her or anything or that I ever feel like actually striking her, but I'm afraid I might. In the garage where I work there are several fellows I don't like. They are loafers who I don't like. They have loafed there for years. They have old maid ideas about things." Asked to explain, the patient said, "Well, if a couple go by, they say, 'There goes so and so. He goes to church on Sunday and he does this today.' They eat peanuts and scatter the shells all around the garage so that everywhere I go there are peanut shells. I feel like telling them to go home, but you dare not do that in a place of business. I put up with it until at closing time I feel nervous inside of me, feel like I'm shaking all over but I'm not. I get mighty mad inside, but I daren't show it. If I could, I'd feel a blame sight better. I know if I could tell things, I'd feel better. Once I kept a thing from my wife for a while. I kept it to myself. I got powerful sick. She found it out and I wasn't sick for a long time after that."

Asked to discuss this incident further, the patient explained, "I used some insurance money to buy something for her that she had always wanted. I intended to make it up, but before I did so the insurance company sent the man a bill for his insurance. Instead of coming to me, the man went to my uncle. My uncle didn't say anything about it, but I knew that the man had gone to see him. I felt that if my uncle would only have scolded me, I would have felt better, but he didn't say anything and my wife didn't know about it and I began getting these headaches something fierce. I wish he would have scolded me. Finally after a couple of months he asked me whether I had taken the money. This was after I had replaced it and everything. I told him yes. He said, 'That's all I wanted to know,' and then walked away. Before I told him about it, I just couldn't go to bed. I couldn't sleep. I tried to play pinochle or tried to work but just couldn't. I'd drop off daydreaming right in the middle of things. My mind would go completely blank. I wouldn't have a thought in it. I'd get hold of myself by trying real hard and then I'd feel awful scared."

Asked how he enjoyed his present occupation working for his uncle, the patient replied, "I'm dissatisfied with that, and I'm dissatisfied with everything I ever take hold of. I want to do something I've never done. I want something with a lot of physical excitement. I want adventure. I want to get away from everybody. I want to go to a mountain and an old cabin and be a miser. I just want to get away from people for a while. I can't make a move

but what I feel somebody is watching me at work. I don't mean that. I think a fellow couldn't live like that for more than a couple of weeks, but I just want to get away from people for a while. I want to do something. I want to do something physical. I like to go out and track animals and birds and shoot at marks. I'd call it bunking. I'd just like to go out and bunk it. I never get to be by myself. Recently I never have a night alone by myself. My wife is always there. When I was a kid I'd want to be by myself. I never was so happy. As a kid I'd plan trips like the one I had with my mother four years ago, just before I got married. I went out to visit my uncle who was herding sheep in Wyoming. We were away two weeks. We went out and found him in the mountains, and I'd go riding on his horse and get off by myself. It was up in the Big Horn Mountains. I couldn't see houses or trees. I could go for miles and miles and miles and wouldn't see nothing. I'd go out riding. I'd shoot jack-rabbits, and I'd see a hill and I'd just make up my mind I'd climb it and I was wondering whether I'd climb it or not. The scenery was the most beautiful I ever saw. I always was a great lover of nature. I remember one night I was just lying and sort of relaxed and thinking I heard a coyote howling in the distance. I looked up, and I saw a high peak sharply outlined by the moon and there right on top of the peak, black against the light of the big old yellow moon, was the coyote with his head raised to the sky howling out his eerie cry. I just looked. It was as pretty a thing as I ever saw. I loved it. I loved the adventure. I wouldn't want to live out there, but if I could just do that alone for a couple of days, I'd be O.K.; but the way it is now people just make me feel awful. I know that people aren't watching me, not for any particular reason, that is, but it just feels like they are when I'm among them. It just makes me nervous of everything I do and I want to get away for a little while."

The patient recited some of the events of his early life and enumerated certain of his superstitions. He believes in the signs of the zodiac and in a lot of other signs. He thinks that when the horns of the moon are up, certain things happen, and when they're down, other things happen. Concerning the signs of the zodiac, he's a little mixed up. He was born in the sign of Scorpio, and he guesses people that were born under that sign are supposed to enjoy sex, but he doesn't especially enjoy it. "My dad," he said, "was born in the sign of Leo the Lion, and I've always associated the sign with ferociousness. Now my dad is pretty good-natured, but once he loses his temper, he just about gets as ferocious as anybody alive. We used to have a little farm that my dad would work after he'd come home from his railroad job and I couldn't stand the way he'd treat animals. He'd lose his temper and beat them up something fierce. Once he got real mad at my dog. The dog had run up and jumped on his bed, and he grabbed him and threw him down a flight a steps and then he ran down after the dog, picked him up, and went out to find the ax. I got the ax and hid it because I knew my dad was going to chop the dog's

head off. Finally my mother calmed him down and sent him off to bed again. I was never scared of my father for myself, although he'd get mighty mad at me sometimes. Once I remember I climbed up on a tree, and he chased me. I jumped out on a limb, and said I would jump off if he kept coming but he did anyway. I jumped, and he fell off the tree and hurt his back. It didn't worry me none. Another time he was chasing me, and I went out and said I'd jump off the porch. That time he let me go."

The patient said that he himself didn't have much of a temper. When he was in college, he'd go out and raise cain with the boys, sometimes just fooling around the town. He did get drunk, but only once. One of the fellows persuaded him to have one glass of ale and then six glasses of beer. He didn't know what happened after that, but he did know that he got a bill for a window, for a broken door of a taxicab, for a broken door in some lady's house, and several other things. The fellow who had given him the beer had guaranteed that he'd take care of anything that happened, and so he did.

Concerning his marriage, the patient said, "I met my wife the same way my dad met my mother. My dad was a ballplayer, and my mother's brother played second base on the same team. He introduced my mother to my father that way, and they liked each other and they got married. My wife's brothers were on the same team with me. She engineered our first couple of dates; after that, though, I asked her for them. She was the one who wanted the wedding most. Ever since she was a little girl she dreamed of having a big church wedding, and we had one. I liked it, too. I still like to go out and see a good wedding."

Concerning sexual relations, he said that he had a feeling that too much sex weakens you. He still doesn't like it very much. He's never felt the same toward his wife since he had sexual relations with her. He just doesn't feel comfortable about it. He wouldn't like it 100% if his wife did like sexual relations, and wouldn't like it 100% if she didn't. He's awfully worried about the way she feels.

5. Sensorium: Remote and recent memory were very adequate. The patient retained 7 digits forward and reversed 4. He did the serial 7's with two errors in 2½ minutes. Although he was slow at simple arithmetic calculations, he did them correctly, explaining that he had always had a great deal of difficulty with arithmetic in school. His store of general information was very good and his formal judgment, as tested by recognition of the Binet absurdities, was excellent. The patient's insight was good in that he realized that many of his headaches and sick feelings in the past had undoubtedly been due to his feeling that he could not talk to someone about his thoughts. He said that he had enjoyed the interview very much, that he felt as though he had taken a load off his chest. He expressed his desire to have continued interviews with the physician and to discuss some of these topics in greater detail.

Physical Examination

The patient is a well-nourished male of asthenic habitus. There is marked alopecia. Beard is very light and the body hair is scanty, but of normal distribution. Heart, lungs, and abdomen are essentially normal. Blood pressure is 110/72. On neurological examination pupils were found to react normally to light and accommodation, but did not hold constriction well. Sensation over the face was normal except for diminished touch and pain sense over the left maxillary region. Left corneal reflex and gag reflex were absent. Grip was good, though stronger on the left. The patient is left-handed. His speech was clear and distinct, but the patient had some slight difficulty with the test phrase—Methodist Episcopal. Other test phrases he could repeat very well. Deep reflexes were slightly hyperactive on the right. Epigastric, abdominal, and cremasteric reflexes were absent on the left. Plantar response was not elicited, but the patient had a positive Oppenheim on the left. There was diminished vibration sense over the anterior portion of the right iliac crest.

The neurological examination was repeated a month later. At that time the corneal reflexes were both present although somewhat more sluggish on the left. Gag reflex was at that time present. Deep reflexes were equal bilaterally and physiologic in extent. Abdominal reflexes were absent bilaterally. Cremasteric reflexes were absent bilaterally. Babinski, Oppenheim, and Gordon tests were negative. There was a small area of hyperesthesia over the right iliac crest. Vibratory sense was absent over this area. Neurological examination repeated twice more revealed absolutely no abnormal findings. Ophthalmoscopic examination revealed the cornea and media clear; nerve normal in outline, color and cupping, vessels normal, vision 20/20 in both eyes. Color fields were normal bilaterally. Laboratory: neutral reaction; specific gravity 1.022; albumin, occult blood, acetone negative; trace of sugar. Microscopic examination showed occasional W.B.C.; epithelial cells; 4+ mucus; sperm. Blood count: W.B.C. 8,300; R.B.C. 4,520,000; Hbg. 92% Sahli. Serology: S.T.S. Negative. Blood chemistry N.P.N. 38; sugar 98. Barbiturate concentrate: 44.8 mgs. % concentration in the blood. Electroencephalographic studies revealed slightly irregular picture on the basis of a 9 per second rhythm. The forms were slightly pointed. The irregularities were due in part to random 3 per second waves predominant in the occipital region, more on the right than on the left. Hyperventilation exaggerates the irregularities but brings no new information. It was concluded that the electroencephalogram was close to normal, showing only individual peculiarities. There was no evidence of epilepsy noted and no regional differences of definite clinical importance.

Psychological Testing

The patient was given the Wechsler-Bellevue, Rorschach, and Thematic Apperception Tests in the order named.

Intelligence, as measured on the Bellevue scale, was low average; and the test generally indicated hysterical repressive tendencies. The performance score was higher than the verbal score and information was low, particularly for one who has been several years to college. There was an indication of shying away from intellectual pursuits. Naive answers and definitions appeared frequently.

On the Rorschach, the number of responses was low, C exceeded M, CF exceeded FC, and naïveté and free-floating anxiety were much in evidence. The frequent anatomical responses suggest preoccupation with conversion symptoms.

The blocking on sex and aggression and the display of affective factors on the Thematic Apperception Test were in general agreement with the findings on the other tests.

In summarizing the test results it appears that intelligence was at a low average level and that the quality was definitely naïve. There was no evidence of independent thinking, and the thinking was paralyzed when dealing with emotional material. There was marked evidence of uncertainty of correctness of responses and tendency to anxiety and confusion. The information and cultural interests were weak; little persistence or creative and integrative ability appeared.

There was much evidence of emotional lability and free-floating anxiety and a wish to be mature coupled with a fear of responsibility. Guilt feelings are apparently easily stimulated and run deep, and there are indications of a strict moral code around which there is not only anxiety but also hostility that is covered by fear. Hostility to members of the family is strongly repressed, and the slightest break-through results in great anxiety.

The dynamic content of the Thematic Apperception Test provided the most interesting material gathered in the psychological testing, and consequently the full report is presented here.

1. A 12-year-old boy thinking how to become a great violinist like someone he idols. He's thinking probably he would like to have the chance to become a great violinist. He has not learned to play the violin as yet, but is probably studying the strings and its construction, and looking forward to lessons. He wanted to take it himself. He will take them and be a good violinist but not as great as his idol. He'll be disappointed. Later he'll lay the violin aside and play it as a hobby occasionally. He'll probably work in some office, marry but have no family—his work will take him from place to place and he will have no time to settle down and make a home. He'll be contented but his wife will tire of moving about; he'll finally settle down and find a local job. He'll remember his violin longings and think back to his boyhood. As he gets older he won't forget, but he was a bit dissatisfied in middle age for at that time he would still try to play the violin but saw that it was useless; he finally realized that he'd never be a great player.

2. An elderly lady has been taking care of her granddaughter. As she opens the door she sees with amazement that her granddaughter has a companion. She approves of this but is amazed her granddaughter hasn't said anything about it. Her granddaughter is 20 years old—her companion is just a local boy from around town and is 2 years younger than the granddaughter. It is probably the first meeting. They are enjoying themselves talking about the future. The granddaughter's ambition is to be a stenographer, and the boy is more of the robust type and he wants something exciting. They met by accident in the store—as the girl was going down to get something in the basement she almost tripped and fell and the young man helped her up. She was embarrassed but he put it off as a joke, talked to her and the next day they went shopping together. They separated after a few words because they were just not suited to each other; she likes to stay around her home town, stay with her grandmother and help her out but the town was too quiet for him. He wanted to go where life was more active—to a big town. They have no dispute over the separation—he just leaves town and completely forgets all about her. She hopes but then gives up. She gets a stenographic job and helps her grandmother, but he is undecided as to what he wants to do. He picks up odd jobs and knocks about. Finally he gets a chance to become a wrestler, works his way up and later becomes quite prominent in the sports world. The two never get together again. She reads of his success but no longer admires him. He never thinks of her. She marries a local gentleman and settles down to a quiet, contented happy life in her home town.

3. This is a peculiar old man who is overreligious. He comes out to the cemetery—a world war cemetery where many unknown soldiers are, to search for a lost friend he had once worked with. He figures he will pick up some clues and that his prayers will be answered and that he would find his friend. He always comes at night due to some witchcraft that he believes in; at a certain hour he comes and hopes for a vision. He doesn't find this friend, but he never gives up. They used to work as chemists in research and had tried to develop some formula which would aid medicine in some disease such as malaria. His friend wasn't actually dead, but he had grown rather afraid of this man because of his queerness. He felt it in his bones that this man was queer, and when the war broke out he went into the service as an M.P. and never contacted his friend again. Instead, he met another scientist, and they continued their research successfully.

4. This is a young man at some seashore hotel. All he is doing is just resting, looking at ships going by and thinking of his childhood ambitions as a sailor. While he is quite wealthy, he is discontented because he never got the chance to do what he wanted to do. He wishes he could forget all his present work and just be one of those sailors out there in that boat. But he closes the window and goes back to bed. He's rather discontent with the situation, but it seems useless to think of it any more so he returns to his

office. Useless because of his age and his position, he is bound in family tradition and is working on a job handed down by his father. If he broke the tradition, his family would disown him—there would be a scandal since he is socially prominent. He might be happy, but he couldn't leave his folks very well. They would have enough money, but he couldn't come home to see them as they wouldn't accept him, and after all he does love them. (They'd forget.) Well, he's an Englishman and they don't forget very easily.

5. That is a man and wife. She's grieving over her son's departure from home and he's trying to console her as she looks over his shoulder after a brave attempt to get her son to come back. But he was determined to go. He was going to no special place—just to get a job because he got tired of loafing around home. The parents keep in touch with him. He comes back later but just for a visit. He gets a fairly good job but isn't the success the parents deserved to have. He doesn't get married—but remains single, even though his parents would rather he get married because they desire to have grandchildren and have a large family. They would have had more children themselves but couldn't afford them. The father was a man who worked in a foundry and did not earn much money. Living was high. Not much more to it.

6. According to that animal, it's probably thousands of years ago—prehistoric time when cave dwellers lived here. They were becoming more civilized as to construction of rude homes, and they were trying to break up stone and make rude rooms—some square and some round. Their work was interrupted by a strange animal which came through as the home was in the side of the cliff, so they fled and tried to erect another home.

Comment

The degree to which the patient reveals his drives, frustrations, and adjustments in these six simple stories is most unusual. One finds repeated again and again the drive for travel, excitement, and adventure, along with success and prominence in sports. The frustration is almost uniformly wife and family along with his own feeling of incapability. The uniformity of the adjustment in the six stories is even more striking. In the first story he flees from job to job and then into fantasies of boyhood that end in disappointment. In the second story he travels—runs away to become a great wrestler. In the third story he joins the army and disappears. In the fourth story he has periodic escapes in fantasy. In the fifth story he runs away from the family and even in the sixth story everyone flees to erect a new home. The stories also touch on his interest and belief in witchcraft. In only the first story is there a marriage, and even then there is no family.

7. This is a large picture of a man's thumb. He put it down on the desk for a fingerprint, and a photo was taken by special camera which enables it to be magnified. The man is securing naturalization papers for this country. He gets his papers and becomes a citizen of the U.S.A. (Drop of blood?)

That isn't blood—that is the fingerprint ink—used to use it in earlier fingerprint days.

8. These are people that are early dwellers where clothes aren't very prominent. The lady with a baby is the girl's mother; and the other two are man and wife, of course. The man is telling the grandmother—sure got me stumped. He's probably just about ready to depart and go search for milk from a coconut or some animal as the mother is unable to feed the child as she don't have any milk. Other people are just pictures of former ancestors that were drawn crudely by burnt wood.

9. This is a room of some noble characters in England where a husband and wife had tea in the afternoon. He is a prominent man in politics, and they have a comfortable home. He is very successful due to the aid of his wife who is a very talented one and a good homemaker. Not much more except that she has three children, she doesn't get out in public affairs, she leaves him do that—she just makes the home. He's off at the office now preparing a script for a speech to be made. He always brings it home and gets his wife's approval.

10. This is a dream in which a man lives in a lighthouse, and of course he has understood that people living in lighthouses become aged much sooner than those living a natural everyday life, due to the fact that he can't get much exercise, or proper foods. He visions these 2 old odd-looking men, and he dreads he may come to look like them. He finally can't stand it any more and becomes very sick of a mental illness. He just worries continually, rather nervous but ever faithful to his job. He has a breakdown, isn't lonely until his ill health sets in. He dies.

11. A mother and her son. He is in trouble in some way. He probably has told mother as she's turned her back. She's more or less disappointed in her son. He's in a jam and he's told her. He might have a girl in trouble; she's disappointed and sorry to hear about it. He's worried about it and is not really capable of taking care of wife and family. His mother is going to say, "Don't worry, son, you can take care of a family if you just make up your mind, you might find success." He met some girl and was fond of her—had several dates—had intercourse and got the girl in trouble.

12. He looks like a criminal to me. He's dressed like lower-class people. He's trying to get away from officers in plain clothes. He robbed a bank or something. They've caught up with him and he's trying to get away. The Secret Service man has things in hand. A newspaper man is there, and as they usually are, he's turned his face, as he's ashamed of his character. He'll probably end up in prison.

13. That sure looks like a gun. That person is the play-boy type. He's dressed in sport clothes. He is sent away on a vacation by his wealthy father or uncle or his mother. He's vacationing somewhere. He has worries. I know a real story. The father sent his boy to college. At vacation time the boy is

ready to go home. He went to play tennis for the last time. Then he went to his room, afraid to go home and face his family as he'd flunked. His father would be ashamed. So he shot himself. That happened. A state patrolman told me that. He'd cut all his identifying marks off and killed himself.

14. (Laughs.) That guy's being hypnotized. Not much you can say about that. Don't look like a show—it looks more private. This man's lying on the bed, he's asleep. Somebody is trying to get information out of him. He's a man capable of hypnotizing who was invited into his house. He's hypnotizing this other man to learn what he knows about another man who's unfriendly with him. This other man is suing. He's trying to find out from the subject what he knows about the unfriendly man so the lawyers can use it in court. He knows the other man has been accusing him of things he didn't do. He wouldn't tell otherwise. He don't want to fight this man, but his friends see that is the only way for him to get a square deal, but would take the rap himself. Don't know what to say—he might have accused him of going with his wife. Subject knows he's doing this to cover up his own mistakes because he's done this with other women himself. Subject is set free and the other man is convicted.

15. Older man is a fatherly man—a good friend of the young man. The young man is in trouble. Another idea. Young man is watching a football game and is much disappointed in the outcome. The old man has a lot of dough and has bet on the game. The old man says, "Never mind, you've probably learned your lesson." He takes it lightly. The young fellow has given the old man money to lay the bets. He probably hasn't done it, but has pocketed it and is going to give it back. The young man is a business man and has earned the money.

16. That's a cliff along the coast. A native spy is looking for a ship. He sights it—that don't make sense. He's looking at a foreign ship. He's going to report it to the officials. They are going to confiscate this ship and find out how it's built. Don't need to hang on rope to do that.

17. That's a picture of a girl. Not in reality—painted before people of sin. Probably she's not been fair to her home life; she's not treated her husband and children right. She's neglected them, didn't do the house up, always grouchy, not much to say. She didn't care if the husband came to supper. The children were at the age where they ask questions. She would just push them aside, smack them and say not to bother her. She should have helped them, she realizes now. Nothing is going to happen—she's just sinned. She sees her mistake and it's too late. Husband left her and she still has the children and can't provide for them. The Welfare will take them, and they'll grow to dislike her and will return to the father. She'll go on about her business—won't see them—but they will be on her mind and worry her the rest of her life. She'll go to work in a factory—a dress factory.

18. All these guys are in trouble. This fellow came home late at night.

He's intoxicated. He finds his wife is not home so he realizes his mistake. She'd warned him about drinking. He just falls on the bed—weeps bitterly to think his home's going to be broken up. He doesn't know if the wife will return. He always has drunk and got into the habit of carousing around with the wrong group of people. It's pretty easy to do. The crowd lowered him to that. They made it look as though he'd be a bum sport. Wife eventually returns. In the meantime he gives up everything as far as ambitions and hobbies and drinks more. She comes back to see if he's changed but finds him the same. She takes pity on him and they have a heart-to-heart talk. He promises to be better but it don't last. She finally leaves him and he falls by the wayside. Poor guy.

19. This fellow's hung. No, he's not—he'd make a good Frankenstein. He's a criminal. He's being hung for a crime he committed, perhaps murder. He looks like an old man so he couldn't have shot his mother. He shot someone, don't know who yet. He was desperate. I'd rate him as a Dillinger. I don't know who he shot though. He has created a robbery of some precious jewels, and they caught up with him and he tried to shoot his way out.

He was in the brewery business. One side against another side of Chicago gang wars, and he just took to robbery as a side line and as funds got low he'd go out and rob a jewelry store. He got to be a criminal carousing around with the wrong group. The majority of it was his parents' fault. Don't take proper interest when they're smaller—telling them facts instead of stringing them along. They go out and learn the truth, and then they mistrust their parents.

20. Looks like William Powell and a hillbilly. The one with a derby is a politician, and this is a friend of his. Friend used as a go-between to find out what Powell wants to know, as to where opponents are, what they are doing, etc. Powell is going to try to blackmail him. Opponent is a slick politician. Friend is going to be caught up on what illegal business he's done for Powell. Moonshining—he's going to squeal on Powell. Powell is going to be tipped off and will try to kill the friend. He'll be caught in the act and turned over to the police and found guilty and be imprisoned. He'll be out in two months. Then he'll get the friend and the other politician. He will have the friend killed as by accident, kidnap the opponent for the duration of the election, and he'll get the office, but he'll fail as people will get on to him. He'll be kicked out of office, and he'll go back to the moonshine business, which will boom for a while, but finally will end up as a poor man in jail for a long time. When he gets out he won't be any good.

As in the first six stories, the patient continues to reveal his inner conflicts in a simple childish manner. In the ninth story there appear children for the first time, but it is particularly interesting to note the phrasing "she has three children." The incapability of taking care of a family continues to be

presented, and the resentment against the parents, particularly the mother, is marked in many instances. This is especially evident in Story 17: "She's not treated the husband and children right, neglected them . . . didn't take care of the house, always grouchy, not much to say, didn't care if husband came home to supper. Children were at an age where they ask questions. She just pushed them aside, smacks them and says not to bother her; she should have helped them." Again in Story 19: "He looks like an old man so he couldn't have shot his mother." Stories of aggression and conflict almost invariably follow such revelations.

The Wechsler-Bellevue and Rorschach Tests were administered before the patient was presented for diagnosis, but the Thematic Apperception Test was not given until several weeks later. The dynamic material elicited in these stories proved to be very helpful in the later therapeutic interviews.

Staff Diagnostic Interview

Doctor C. I think that it certainly is a psychoneurotic reaction with hysterical elements predominating. I wouldn't be surprised if the headaches were entirely on the basis of identification with the father in some way. The patient is certainly very much confused about his sexual desires and fancies and would like to retreat as much as possible from the whole problem. I don't presume we're really in a position to confirm or deny the diagnosis of encephalitis. At any rate I don't know that it plays any particular role in the present illness except possibly in so far as this reaction may in part be a reaction to some threat upon his bodily integrity and been set off in that way. Certainly, however, his barbiturate intoxication must play some role in the clouded consciousness that he's had. Forty-four mgs. is certainly very high, and that was secured five days after his entrance to the hospital. Outlook, I should think, is good as far as this attack is concerned, and probably he'll get along fairly comfortably in the environment in which he lives although he's not ever apt to be a very well adjusted individual.

Doctor N. When was the last spinal tap? Was that the one the brain surgeon did?

Doctor C. That was done perhaps a week or ten days before he came here, the middle of January, and that would be about six weeks after the original illness.

Doctor N. In view of the conflict about the spinal fluid, I think we ought to have one which may or may not show anything. My own feeling is he might be worked up with the same sort of work-up we give people with convulsive seizures. His history of attacks, somnolence, and waking up ravenously hungry may be due to blood sugar.

Doctor C. I thought of those symptoms largely in terms of epileptic equivalents originally. I suppose in a sense I shouldn't place as much reliance on

the encephalogram as I did, but we mentioned that particularly in our letter to Dr. H., and he felt definitely the electroencephalogram did not indicate anything like that.

Doctor W. That wouldn't help you with the blood sugar.

Doctor C. The blood chemistry has been done. We could repeat it for our own curiosity.

Doctor W. Has he had a sugar tolerance curve?

Doctor C. No. He's had fasting blood sugar.

Doctor W. I think that might be gone into. I think that's worth while.

Doctor N. If he has a severe headache of the old fashioned kind, we could get one at that time.

Doctor W. The sugar tolerance curve ought to show something.

Doctor N. Concluding that these things were negative, I would agree with the diagnosis.

Doctor J. Psychoneurotic reaction.

Doctor B. I've discussed the case before with Dr. C. I have the same feeling I had originally—that is, he has some organic disease of the brain, but I don't know what it is.

Doctor C. I think it would be nice to see him in one of his spells before we make up our minds too definitely. He certainly looks like he belongs in the migraine epileptoid group.

Doctor M. I'm hoping he could have one of these spells so we can actually see one. At the present time I think he's hysterical reaction, barbiturate intoxication.

Doctor P. I'll agree with Doctor C. with reservations which will remain unidentified.

Doctor C. I think there is also the possibility . . . I mean after all I have seen several cases that started out with hysterical symptoms and ended up by being some degenerative nervous disease.

Doctor W. It's of some interest that the alopecia and nervous breakdown parallel his father's pattern.

Doctor C. Yes, and the fact he actually does have a good deal of dissatisfaction which he is unable to express and which this attack has very conveniently solved for him because he has been relieved of the responsibility for the taking of those funds.

Doctor W. Possibly the best thing to do is give him barbiturates and get him intoxicated. Those states might represent barbiturate jags of one kind or another. You can't laugh off the absent cremasteric and the anomalous findings, the anesthetic areas and perhaps even the diminished corneal reflex could be on a hysterical basis. I'm inclined to feel we have basically a hysterical type of response. I think we have to consider the diagnosis tentative. The prognosis is very good, and if he can go along here for several weeks without showing any spells, we can assume the spells were due to something

intercurrent at the time and not due to an organic process going on in the patient. That would be the wisest assumption to make. It might not be so.

Doctor C. I don't know whether this is wise or not. I have been saving the spinal puncture for last because he's opposed to the idea and several times spontaneously insisted he doesn't want one.

Doctor W. With two negative spinal fluids in the past and with positive spinal fluid in the beginning, I don't think a spinal fluid would now tell us anything. Unfortunately, we don't have a report of total protein in the picture at those times, but if he's symptom-free now, it would be surprising to find a cell count in a picture like that and it would be unusual to find a high protein at this time. It would be worth doing just to have a picture in our records about the thing, but I would be rather surprised if you found anything positive in the light of the total story.

Diagnosis: Psychoneurosis: Hysterical with Barbiturate Intoxication.

Prognosis: Good.

Recommendation: Further Hospital Stay and Study.

Course in the Hospital

The patient's behavior in general was quite normal. He took part in most of the activities with a great deal of pleasure and made many good contacts with other patients and with members of the hospital personnel. When he talked with his physician about some of the nightmares he had as a child, the one that he recalls most distinctly was that of a family being attacked by a band of marauding Indians. He could not identify this family, except for the fact that the father and mother resembled his own parents, but were not actually they. He himself was a spectator of the attack by the Indians and became terrifically frightened when the Indians buried their tomahawks in the skull of the father of the family. This dream repeated itself several times. The patient had not himself made any connection between this and the episode he spoke of the other day in which he described his father's desire to kill his dog with an ax, but when the possible connection was pointed out, the patient readily granted it, although he was not quite sure as to the actual time relationship between the two events. The only other episode during his life in which an ax was used was in chicken-killing. His father had a very elaborate ritual concerning this. He insisted that after the chicken's head was chopped off, the chicken must be dropped immediately; otherwise it would cause some peculiar type of nervousness in the individual who held it.

The father had numerous other superstitious beliefs. These are concerned chiefly with the time of the year during which planting, reaping, and other similar acts of husbandry are to be performed. They are connected with particular signs of the zodiac and stages of the moon, and are also gleaned from Baer's Almanac. However, they apparently were much more extensive than the patient can remember at the moment, since the patient himself says that

up to the time he was 17, he lived almost exclusively by signs—that is, he was forced to do this by his father. When he went away to college, he had numerous superstitions which were broken up by his favorite teacher, a geography professor to whom he became very much attached. This professor would have long arguments with the patient in which he pointed out that these superstitious beliefs did not fit into the modern world. However, the patient continues to observe certain of these superstitions, such as starting projects when the horns of the moon are up or down or are in some other particular phase. He does not recall many of his father's superstitions, but does know that his wife, on hearing of them, has often laughed very heartily. . . . He can remember one occasion which his paternal grandmother told him about recently. She said that his father and seven paternal uncles and aunts used to go to church very regularly, and on their way would pass a deserted graveyard. They were very much concerned about the possibility of ghosts and came home to tell their parents about the place. The grandmother knew that if anyone could see a ghost, it would be someone who was born between Christmas and New Year's. Therefore, she took her youngest daughter, who happened to have been born on December 27, and walked past the graveyard with her. She sent this young girl ahead and told her to keep a sharp watch because if a ghost were there, she would be sure to see it. If she saw the ghost, she was to call out at once. When the girl moved ahead she screamed and yelled in a most convincing manner; and after that the entire family was convinced that ghosts were present. The patient laughed heartily as he recounted this incident, but it was apparent that he was not prepared to deny entirely the possibility of its being true. In any event, he was convinced that being brought up in such an atmosphere is bound to have had a definite effect upon his personality development.

He also recounted an experience with hypnotism which occurred when he was a student at the normal school. A hypnotist had been invited by the authorities of the college to come and give a lecture to the students. This gentleman hypnotized seven students in the audience. The patient thought that the whole thing was a fake, and went up himself when the second call for volunteers was made. He was quickly hypnotized and was very much startled to find himself coming to with the hypnotist slapping his face. He has no recollection of what he actually did, but was told that he sang "Auld Lang Syne" at the top of his voice, something which he wouldn't have dared to do if he had been in full control of his faculties. This experience has always interested him, and he has wondered about the powers of the subconscious mind. Because of this experience and of his interest in such matters, the patient was very well prepared to accept a formulation of his illness as being based at least in part upon reactions which were not readily accessible to consciousness.

After a time he became comfortable in the hospital and was free of his

headaches, but somewhat evasive with his physician, tending to make light of the problems which brought him to the hospital. Then he did not produce much new material, although he talked some about his unwillingness to express hostility for fear he might lose control of himself completely. He thinks that if he were to express anger at his wife, he would actually hit her. Consequently, he has been unable to express dissatisfaction in any other way than by leaving the house and refusing to talk to her for a period of time. He continued to be evasive and to say that there was nothing really wrong but his headaches. His physician therefore decided upon hypnosis to see if the procedure might result in the discovery of some material otherwise not available. He agreed to be hypnotized, and the writer took the role of the hypnotist, the therapist in charge of the case being present at all interviews.

On the first occasion the patient was put to sleep twice with practically no difficulty but was kept asleep for only a few moments. No effort was made to get him to do anything during the hypnotic state. Later, however, the patient was put to sleep for a longer period of time. He was told that he was going to have a dream and was asked to report the dream as it occurred. Immediately after being put to sleep, the edge of a cold ash tray was drawn along the patient's neck. Within 30 seconds he began to clench his fists and tighten the muscles of his arms. He did this several times and then began to talk in a low but distinct whisper. His first remarks in a very fearful tone were, "I didn't do it. I didn't do it." After that he was silent for a few moments and then said, "Come on, boys, let's get these guys. We've got to be careful. You fellows go down by way of the canyon, and I'll go around the side and approach them. When I give the signal, you come along. Be careful. Don't come till I give the signal." He then got up and walked around the room aided by Dr. S. He finally ceased walking about, hitched up his belt, swaggered a few steps as if he were approaching someone and said, "Hello, stranger. How long you been around these parts?" He carried on the conversation in generalities for a few moments, then made a motion with one of his arms and said, "O.K., boys, take him away." We then made a noise by tapping on the desk with fingers to imitate the approach of a horse. The patient suddenly shrank to one side saying, "What's that? What's that? Listen, here come some horses. Be careful." He was asked where the horses were coming from. The patient said, "Wait a while, I'll find out. Be quiet." He lay down with his ear to the floor and said correctly, "It's over there—northeast," pointing both to the sound and to the northeast as he said so. It should be noted here that the patient's eyes were closed throughout the whole experiment. He shrank back as if to hide from the approaching horses and then finally said with a sigh of relief, "Oh, it's you, sheriff. I thought you were coming the other way. Well, here are a couple fellows that we got for you." When asked who they were, the patient explained, "They're a couple of fellows who left their wives and deserted their little children. I guess you'd

better take them along to jail. So long, sheriff." In the role of the sheriff Dr. S. said, "You're a stranger in these parts. Where do you come from?" The patient replied, hanging his head sorrowfully, "Oh, I come from back East." Asked what type of work he did, he said, "Oh, you wouldn't like my work." He was silent for a few moments and maintained an attitude of depression. Finally he clenched his hands and said, "But I've got a little girl just 17 months old, and I've got to work hard. I've got to give her the best of everything, the best in the world."

At this point the patient was brought out of the hypnotic state. He was very sleepy and lay down on the bed for a while. He professed no memory of the entire experience, but felt perfectly comfortable. The patient was then asked by the hypnotist whether he had ever been to the West. At first he said no, but after several minutes he recalled his vacation trip there five years ago. He then repeated the story which he had already given to his physician during the early days of his stay in the hospital.

A week later another hypnotic experiment was carried out with the patient. He was hypnotized very rapidly, told that he was going to dream, and asked to describe his dream. An ash tray was knocked on the edge of the desk, and the patient interpreted the sound as the clanging of a bell during a boxing match. He proceeded to go through two rounds of very vigorous boxing. At the end of that time he was pronounced the winner, and he retired to his corner, breathing heavily. The hypnotist suggested to the patient that this would be his last fight. He hung his head and replied sadly, "Yes, my wife doesn't want me to fight. I guess it's because she loves me so much. She's afraid I might get hurt or something. I wouldn't get hurt, and it's easy money and there just isn't any easy money like you can pick up in prize fighting but I love her too, so I guess I'll have to give it up." Other productions were not particularly significant, the patient merely reviewing his feeling that his present job in the garage was most unsatisfactory.

After being aroused from the hypnotic trance, the patient was extremely fatigued and had to lie down on the couch for 15 minutes or so. During that time he professed to have absolutely no memory of what had gone on while he was under hypnosis. He spoke about his interest in sports and said that he had given them up because he just didn't have time to take part in them and work hard enough at his job to earn the money to support his family. He admitted a certain degree of disappointment at the necessity of doing this, but felt that he had no regrets. He was very much in love with his wife, worshiped his infant daughter, and felt that the sacrifices he was making were those which we have to expect to make as we grow older and assume responsibilities. After returning to the ward, the patient felt still so fatigued that he lay down on his bed. Shortly thereafter he fell asleep and began to dream, reciting his dreams as if he were still under hypnosis. His remarks were rambling and he failed to complete sentences or ideas. He jumped

rapidly from statements about the grease and hard work at the garage to fighting episodes and baseball games. He finally fell into conversation with R. in the following manner: "Tell you something, R. You know something? I think you and I could make some money. It's just to talk about because Lord knows we couldn't do it. I have just one ambition—to go North. I want to go North. Canada maybe. Start a trapping business. Not this little stuff but a big thing—take over a trading post. That's where I'm caught. I'm not sorry I'm married. No, it's all right. Especially that little girl, worth $1,000. You know, R., it takes children to make a home. Oh, yes, I had a home before —sort of. But there is something about children you can't explain. I love my wife, and she apparently loves me. Well, yes, I feel sure she loves me. But about children—it sort of draws you together more. Sure you have to make sacrifices. You know, I wish I could have had a chance when I was younger. Maybe I could have gotten some of this crazy stuff out of my system. Like when Byrd went to the North Pole, well, I would have given my right leg to have been the Boy Scout he took along. Sure there were hardships, but that is adventurous. Well, yes, I would like some work more adventurous. It's the same old grind day after day. Dirty and unhealthy. With concrete floor. Full of fumes. Gives you the jitters. I don't ask for help, R. Don't worry about me. Take care of yourself. You are as close to me as a brother. Yes, I used to wish I had a brother. No sisters. They don't do anything. Sit around all the time. D. is not that way. She's a good sport. Likes to mix it up now and then. Never wanted a sister. They are a pain in the neck and a drawback to adventurous living. You might call it lonesome, but I wasn't lonesome when I was a kid. Not when you have a good day. Tell you about an adventure I had. I was in the house. Nigger—my dog—he was black as night—was tied out in his tent with his head out the door—you know like a woman so he wouldn't miss anything. Well, a salesman came to the door, and I was scared speechless. Well, Nigger came out there, and the way his chain rattled scared the salesman. Mister, he beat it. I thought I would die laughing. Listen, if I had ahold of the guy that poisoned him. Man, oh man. Pennypacker I think did it. Of course I don't have any proof. I did break a window in his house that nobody knows about. Well, it takes a lot to get me riled up. But if I get my dander up, I am something. Yes, thousands of people get in trouble every day because of their tempers. Yes, Dad had a temper, but he doesn't worry. Mother gets her dutch up, but no temper. Say, I'm hungry. Let's go back by the creek and spot the muskrat holes. There is something fascinating about them. I don't know—there is life in them. Something you can't explain. Well, so long, R. Squeeze the eagle until he hollers."

In about ten days the patient was once more hypnotized and told that he would have a dream during which he would find himself a boy of ten. The patient went under very easily and soon began to dream that he was going down toward the "holler" with his dog, Nigger. He carried on quite a con-

versation with his dog and suddenly halted on his way to let old Mr. Pennypacker go by without seeing him. The patient then told Nigger how awful Mr. Pennypacker was. He accused the man of having poisoned the dog he had before he had Nigger and he threatened to get even with the old fellow. He said, "If old Pennypacker wasn't so big and strong, I'd beat him up. I sure wish that I was strong enough to do it. We'll get even with him though, some dark night. I guess we can throw some rocks through his windows or something. He's a mean old guy, and I don't like him a bit."

The patient continued this excursion in the "holler" and finally was interrupted by the hypnotist, who took the part of a friend. When the patient was asked something about his feelings toward the family and particularly about the fact that he was left alone so much, he said that he was not very lonely now because he had his dog, Nigger, to play with, but indicated that just a few years ago he had been extremely lonely indeed. He didn't know what to do, and he was very much upset about the fact that his parents always left him to himself and his father never had time to spend with him the way fathers of other boys did. The patient also indicated that his mother had quite a temper, and it was necessary for him to be on his guard not to get her angry. It wasn't so much that she would break out and yell the way his father did when he was angry but that she would insist upon perfect and complete obedience. He said that there was no doubt as to the fact that Mother was the forceful person in the family and Father never crossed her. Then he began to talk about not liking girls very much, but unfortunately it was necessary to interrupt the hypnosis at this point.

The patient came out without difficulty. He remembered nothing of the dream and said that he felt quite well. When he went back to the ward, he seemed comfortable for a while, but in 15 or 30 minutes, he began to walk up and down the corridors and bumped into the walls as though he were trying to go through an opening which was not there. One of the other patients thought that he was joking in some way. However, the patient was persistent in his efforts to get through doors which did not exist and finally the attendant took him into his own room, trying to get him to lie down on the bed. At this the patient became quite excited. He began to struggle violently, pushed the attendant aside, and by the time the physician was called and arrived on the ward, he found the patient being held down in bed by three attendants and two other patients. They said that the patient had imagined himself in a barroom, that he had asked for a drink of sloe gin, had taken it, and then had begun to shove and push this way and that so forcefully that it had been very difficult to control him. During the struggles the patient had bumped his head against the door but apparently had not harmed himself.

When the physician got there, he sent all but one attendant out of the room and then took a part in the patient's fantasy. The patient began walking about the room, aimlessly bumping into objects when he was not guided away

from them by the physician who took his arm in order to do this. Then he climbed on the bed. At this point the physician suggested that he had better not walk very much further or he would fall off the cliff. The patient immediately stepped back, turned around in the other direction, fancied he saw a pool, and dived into it. Fortunately the physician was able to catch him and lower him gently to the bed. There the patient began a vigorous Australian crawl which he kept up for three or four minutes. Efforts to awaken him during this time had been unsuccessful; but as the patient reached the shore of his fancied pool, he rolled over on his back, quite tired. At this moment Dr. S. arrived and awakened him in the manner used to bring him from the hypnotic state. He came to with a start, looked around, was very much frightened momentarily at the fact that he found himself in unfamiliar surroundings, and accompanied by the hypnotist and his physician, both of whom he had left on another floor some hour or so earlier.

At once he began to complain of an intense pain in his head, which was associated with a feeling of numbness and tingling in the fingers and arms. This pain had apparently not been present during the patient's previous excited state, since at that time he had been talking and laughing cheerfully while he carried on discussions with the hypnotist and therapist, who were in the room with him. The pain persisted for two or three hours. During this time the patient was persuaded only with the greatest difficulty to be quiet. The pain then disappeared abruptly and did not recur. After this hypnosis, the patient was extremely comfortable and got along just as well as usual on the ward. In discussion with the physician, he was very eager to find out what had been discovered during the hypnotic experiments as well as from the Rorschach and Thematic Apperception Tests. It was pointed out to him that since this material came from what he termed a subconscious mind, a mere repetition of it would not be very satisfactory, since the material was not available to him under ordinary circumstances. It was suggested, however, that if we could go so far as to assume there actually was such a state of mind, we might be justified in assuming that much of the content of such a mental state might deal with facts which the patient would find uncomfortable to consider under normal circumstances.

His therapist suggested that if he discussed some of his fears and worries, he might recall some of the points that had come up during his hypnotic states. The patient at first claimed, as he had done before, that he did not have any worries, but when he was shown that apparently he felt a need not to have any worries, a need not to get angry at anyone, he readily admitted this. He said that if a person got angry at people, he would lose all of his friends. Just how he knew this, however, he could not say, since he had to admit that his parents, his girls, and most of the boys he knew got angry at him quite regularly and yet remained his friends or at least he chose to consider them so. He then agreed that this was perhaps an idea of his own, but

one which he had held for many years. He recalled that even in childhood he had always found it impossible to disagree with people. He seemed to think that if he did so, they would leave him; and of course he knew from the fact that his father and mother were always away from home how unpleasant it was to be deserted and left to one's own devices. When in school he would always lend almost his entire allowance to other boys because he was afraid to refuse them, fearing that they might then have nothing to do with him. He himself found great difficulty in securing a loan from other boys, but he did not have to worry about that. The patient seemed quite startled when the obvious conclusion was pointed out, namely, that he seemed so dependent upon the good will and appreciation of others that he attempted to buy it, apparently having very little sense of security in the feeling that people might like him for himself alone. After some consideration he granted that this statement might have more than a grain of truth. He recounted the number of instances which seemed to bear out the point.

Another source of discontent which the patient had mentioned is the pressure being applied by his mother, principally, but by his wife as well, to get him to leave his comfortable job with his uncle and move on to a situation in which he might hope to achieve some degree of independence and financial security. The patient stated, however, that he was no business man. His uncle would send him out to collect a fee rightfully owed him, and the patient would see how poor the man was and come away without having asked for the payment. Since he harmed himself in so doing, it was at once apparent to him that this was not merely due to his tenderness for others but also due to the fact that he feared to have them think ill of him.

When it was pointed out to him that he has difficulty in securing even his just rights in a business deal, the patient replied that he knew that this was so. He immediately altered his comment to say that he knew that he could not be treacherous by himself, but if he were in a group of treacherous people, he would have no difficulty in following the same general pattern.

Selected items from the hypnotic interviews were presented to the patient as topics for discussion. In a series of several interviews he developed a story of his early insecurity with his family and his feelings of not being a vigorous masculine person except when engaging in athletics. When confronted with the episode of one of the early hypnotic periods in which he turned over to the sheriff two fellows who had deserted their wives and children and his own statement to the sheriff about his little girl and the necessity to work hard for her, he cried desperately for several minutes. He then said, "I am both of these people." Following this he discussed rather completely his love for his child and his desire to get away from a responsibility he could not meet. He then spontaneously said, "I have been running away into make believe." He would not, however, talk any more during this interview.

In the next interview he was flooding over with the desire to talk about

what he called his make believe. It was then decided to allow him to review his stories in the Thematic Apperception Test and the full material of the hypnotic interviews. He gradually began to be able to talk more freely about his hostility to his parents and to his wife and developed more understanding of the immaturity of his own behavior. There were many retreats into anxiety and guilt and considerable ruminations about his incapabilities. He filled in many revealing details of the hypnotic interviews and related them to his needs to express his hostility and to escape from his responsibilities. He showed great amazement regarding the amount of material that could operate as unconscious motivation, but his insight continued to improve and he gradually worked through the problems regarding his family quite satisfactorily. He continued to have some reservations about his own ability but became much more able to accept himself for what he was and to meet the realities of living.

It was finally possible to begin developing plans for the future that would enable him to be self-sufficient. He completed arrangements to borrow some money and set up his own garage business. He has managed the business but his only work on machines was to build a racing car which he himself drove in races. During the first year out of the hospital he had some further periods of doubt about his capability but was able to resolve these difficulties in monthly interviews. At the end of the first year he stopped the racing because it was dangerous and now says that he gets all of the excitement he needs in building a growing business. He takes one day every two weeks to go hunting with R. and two other friends. He has had no further difficulties and at this time appears to be well stabilized.

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